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ORIGINAL ARTICLES

THE STATE'S DUTY IN THE CONSERVATION OF PUBLIC HEALTH.*

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The state boards of health as they now exist in this country are the outgrowths of the increase in the population and the advancements made in the education of the community at large.

In the early days when population was scanty, the people living in very small communities, widely scattered, there was little need of a board of health. The families were not exposed to contagion, and even if contagious diseases did occur the rest of the people could easily avoid the dangerous locality. When, however, people came together in larger numbers and in more numerous areas, a new danger was introduced. It was then no longer so easy a matter to avoid contact with one's neighbors and some means of protecting the public had to be devised. Each locality was able to make and enforce its own laws in regard to its own protection. Public opinion was sufficiently strong to accomplish this.

There finally came a time when it was no longer sufficient to protect against immediate neighbors. Some method had to be found to guard against the importation of infectious diseases from more distant points. As transportation facilities increased this question became more and more important until the local officers were unable to cope with the situation.

It is at about this period that state boards of health were introduced. The people of the state realized that as a matter of self-protection it was necessary to have some person or persons given the authority to control

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the matter of the public health. Although the management of infectious diseases was probably the primary cause of the formation of those boards, their duties have long since progressed far beyond such narrow limitations. To pass from the prevention of the spread of disease to the control of the qualifications of those wishing to practice medicine, is not difficult.

It is not enough that a few men should be able correctly to diagnose and manage such diseases. The public health requires that those men who are to look after the sick should possess sufficient knowledge to prevent the exposure of the community. To bring this about necessitated the empowering of the board of health to make such rules and regulations as seem necessary to insure that none but well qualified men should practice medicine.

It is again but an easy step to pass on to the control of many things that deal more or less directly with the health of the community. In some of the western states the matter of the pollution of streams of water used for drinking purposes is not so serious as in the east where the population is so much greater. But it may become a matter of seriousness, as was the case of St. Louis in relation to the Chicago drainage canal.

Pure foods are also subjects of direct importance. The people cannot remain healthy if the foods that they eat contain deleterious materials. This has, however, become so extensive as to necessitate the establishment of a separate set of machinery.

The chief duties therefore of a State Board of Health may be divided into two main groups: The prevention of the spreading of diseases already within the confines of the state, and, secondly, the protection of the people from infection from the introduction of diseases from outside sources.

The second of the two will be considered first even if it in a way does not seem quite as important as the other. It is very evident that this is a matter of varying importance according to the situation of the state. In the west there is comparatively little danger from immigration, while those states situated on the oceans are constantly threatened. New York with its hosts from Europe; New Orleans with the spectre of tropical diseases, such as yellow fever; and San Francisco with that disease of Oriental filth, bubonic plague, have to be ever on the watch. The latter city unfortunately, as a result of political intrigue, has allowed the plague to become endemic within its confines. That necessitates a constant guard being maintained by other states lest an epidemic arise.

St. Louis must also be on the lookout lest yellow fever should gain lodgement, as the necessary mosquito, the Stegomyia, exists in sufficient numbers to be distinctly dangerous if a focus of the disease should develop.

In many states the question of the entrance of consumptives has reached a very serious stage, so much so that Texas for instance will not allow a tubercular non-resident to remain within its borders.

Small-pox is another of the invading hosts, but we are better able to cope with it and with diphtheria than with other diseases. Vaccination as a preventive in the one, and antitoxin as a curative in the second, have materially lessened the danger of such infections. The pock-marked man is now the exception instead of being the rule, as he was a century ago.

The quarantine duties of a board of health are indeed very necessary, but the weightiest matter is probably that of safeguarding the people from diseased individuals already within the state.

In considering the first of the groups mentioned, it is strongly impressed upon us that the state board deals not with the cure of disease so much as with its prevention. It is not enough to treat a sick person; the physician must exert himself in every way possible to prevent the disease being passed on from one to another. The physician himself must be so educated and trained as to enable him both to recognize the condition and to limit it to the primary focus.

Those ailments that especially belong to the realm of the Board of Health are the ones that are known as the infectious, such as tuberculosis, diphtheria, typhoid fever and small-pox. In a somewhat less degree, yellow fever and epidemic cerebro-spinal meningitis come into consideration.

The control of these diseases is by no means a matter of sentiment; it is one of great economic importance. It is being more and more widely recognized that sickness is a source of great monetary loss to the public as well as to the individual, not to mention the suffering that it may inflict upon those dependent upon the sick person.

When one takes into consideration the value of the lives lost each year by preventable diseases—and tuberculosis, diphtheria and typhoid fever certainly belong to that class—it can be readily seen that a trifle of that amount, if expended for better control of the state health, would result in a tremendous saving.

Various courts have placed an average value of five thousand dollars on a person's life, and when one multiplies the number of death from the above three diseases the figures obtained are appalling. In 1900 there were in Missouri 3,459 deaths from consumption, 1,682 from typhoid fever and 1,075 from diphtheria, all from conditions that need not exist.

In a recent paper by Professor Wm. T. Sedgewick, he shows that Mr. Allen Hazen's theorem that for every death from typhoid fever avoided by the purification of a polluted water supply, two or three deaths are avoided from other causes, is not only correct but possibly conservative. When the deaths from typhoid fever in St. Louis during 1905 are considered, we see some interesting facts. There were a

hundred deaths from that disease, a loss of a half million of dollars. Then according to Hazen's theorem, two or three hundred deaths from other causes attributable to the conditions that also bring about typhoid fever, might have been avoided. Consequently it is a much wiser plan to prevent people from becoming sick than it is to cure them afterwards.

To bring this about it is necessary that these diseases mentioned be readily recognized. How is this to be done? It is a well-established fact that the man who has had the greatest experience along some special work is probably the best equipped to deal with the situation. The general practitioner is well able to undertake the clinical portion of the case, but there are certain aids to his proper diagnosis that he is unable to employ. It is at this point that the State Board is able to render very material assistance by placing at the disposal of the physician some one able to do the necessary work.

The employment therefore of a State Bacteriologist has been conceded by all to be of paramount importance. It is from him that great help may be obtained. He becomes in a way a necessity, as the majority of the general practitioners are unable to make the required examinations. This inability arises from two sources: either from a lack of proper training at the time of study, or from the lack of time necessary if the work is to be properly performed.

It is therefore necessary to have some one who, to begin with, has had the proper training and who also is able to devote to it the requisite time. The present tendency is to specialize, and there is no branch of medicine that demands the undivided attention to such an extent as does that of pathology and bacteriology. The field becomes broader and broader every day and no time is to be given to extraneous subjects if the above two are to be thoroughly grasped.

Even so comparatively simple an examination as that of sputum for tubercle bacilli is best done by some one who is accustomed to the work. This holds true to a greater degree in the recognition of the Klebs-Loeffler organism of diphtheria, and even more so in the performance of the Widal reaction for typhoid fever.

Another subject that must also be taken up for consideration is that of possessing the necessary facilities. A fairly simple but complete laboratory is expensive, and when all the apparatus that might be necessary is to be obtained, the amount of money required is much larger than the usual practitioner can afford even if he had the time to employ it.

It is consequently necessary that there should be not only a state bacteriologist, but he must have a place in which to do his work. The most advanced states possess large and complete laboratories in which all kinds of examinations can be made. Not only of those above mentioned, but where diagnoses of specimens of tissue, of urine, etc., can be undertaken, as well as chemical investigations of food products. The greater the facilities provided the greater, naturally, will be the

amount of work done and the more valuable will it be to the community in general.

It also not infrequently happens that the clinician cannot say positively what the case may be. Some link in the evidence is lacking because he is unable to make the examination that is necessary. Typhoid fever, malaria and miliary tuberculosis can resemble each other sufficiently closely to make the diagnosis difficult. An examination made of the blood for either the plasmodium of malaria, or for the Widal reaction, may definitely determine which of the two diseases the patient has. Again, the finding of the tubercle bacillus in the sputum will also settle the difficulty.

There is, however, one point that must not be lost sight of. That is that the laboratory findings must not be considered as absolutely final. Too much weight must not be laid upon them, particularly if the examinations prove negative. Because tubercle bacilli are not found in the sputum it does not necessarily follow that the patient does not have tuberculosis. The absence of agglutination when serum and typhoid bacilli are brought into contact, does not in any way prove absolutely that the infection may not exist.

The clinical side, particularly that great branch known as physical diagnosis, should in no way be neglected. It is very easy to say that you will wait till the laboratory report comes in. You are losing time and not doing justice to your patient. The consumptive certainly has a much better chance for recovery if his condition is diagnosed before tubercle bacilli appear in the sputum. When that occurs there has been destruction of tissue and even if that does heal we have scar tissue replacing the normal lung. The laboratory is an adjunct to clinical medicine. It can aid very greatly but it cannot supplant physical diagnosis and experience.

To go more into detail as to the duties of the State Bacteriologist, we will find that they are primarily comparatively limited. He is expected to do those things that will assist the physicians in his state in safeguarding the health of the community at large, not so much that of the individual.

The disease that to-day demands the greatest attention is tuberculosis. The physician must not only carry out such treatment of the case as will insure its rapid recovery, but he must protect others. To assist him in that work the ability of the State Bacteriologist is put at his service.

This same holds good in regard to the diagnosis of diphtheria and typhoid fever. A single case of any of the three diseases mentioned is a menace to those around. Consequently the State Board of Health is anxious to decrease as much as possible that danger by aiding the physician in the recognition of the condition.

Such examinations as these naturally belong to the province of the State Bacteriologist, but occasionally there appears to be some mis-

understanding as to the limitations of that person's duties. The State Board does not expect to pay its bacteriologist for every and all microscopic examinations that may be desired. The Board's interest is in the protection not of the individual but of the community. It may be a matter of great importance to the physician and the patient to determine whether or not a given tumor be malignant. That, however, does not concern the patient's neighbors. Neither is the public health disturbed if a question arises as to whether or not a certain intestinal parasite is a round or flat worm. These are not matters that concern the majority of the populace as do the infectious diseases and therefore are not required of the State Bacteriologist.

Another point that comes more or less directly under the notice of the Board is the dissemination of the knowledge of the work that is being done. It is in a way a variety of post-graduate instruction. There are many men who on account of their geographical position are unable to keep in touch with some of the methods employed by their professional friends who happen to be more favorably located. It is only within quite recent years that the laboratory has been called upon so extensively. It is therefore necessary to show physicians the value of such methods. The most convincing way is of course to carry out some examination and thus demonstrate its value. This, though, can be done only with the assistance of the physician. The value of the work can be shown only by his asking; the most that the State Board can do is to inform him of the facilities that are being placed at his disposal.

A FEW OBSERVATIONS ON THE CONJUNCTIVAL REACTION TO TUBERCULIN.

By A. W. McALESTER, JR., M. D., of Kansas City, Mo.

It has been nearly a year since I had the honor to report to the Association the results I had obtained with the ophthalmo-tuberculin test. Since June of 1907, the literature has been full of reports and statistics. There are certain features in these reports that are not sufficiently emphasized and may have escaped the attention of many. If the test is to be used, it should be with a thorough understanding of the limitations and the dangers attendant upon it; therefore, I beg to call your attention to just a few observations contained in several articles upon this subject, to point out one or two limitations affecting the reaction, and to urge you to be a good diagnostician, from the standpoint of an oculist, of diseased conditions of the eye before making use of this test.

First, Calmette states that "the reaction is harmless; it is reliable, simple, afficacious and elegant." He cites ten thousand tests with no harm and with only thirty-nine cases of "excessive reaction." Personally, I have found the reaction to be as stated by Calmette, and my colleagues in Kansas City, who are using the method with proper caution, are having equal success. I have had no cases of excessive or severe reactions but I have seen one in the practice of a colleague. The reaction in this case came on some twelve hours after the instillation of the tuberculin. The conjunctiva was very edematous; the lids were swollen; the skin surface red; the glands on that side of the face were swollen and there was some pain in the brow. The patient recovered nicely under proper treatment. (The clinical manifestations which caused him to use the tuberculin consisted of night sweats and slight temperature. The patient has completely recovered.) Calmette's percentage of positive reactions in positive tubercular cases is higher than the results I have so far obtained. In the positively tubercular cases I obtained reactions in 76 per cent, but those not reacting had tuberculosis of an advanced type, and, in this connection, I wish to call your attention to the results obtained with several lots of tuberculin and to eleven cases of undoubted tuberculosis tested by Dr. Barber. Among these cases he thought there was probably only one reaction and asked me to test them with the tuberculin I was using. This tuberculin was of the same stock as that used by Smithies and Walker, whose interesting report is contained in the *Journal of the American Medical Association*, it being supplied me by the department of experimental medicine of Parke, Davis & Company. All cases reacted to this tuber-

culin except those having large cavities in the lungs. A third test was made on the eleven cases with the first tuberculin with former results, i. e., probably a reaction, and I am informed that a fourth test was made on some of these cases with no reaction. Now it is well understood that patients supersaturated with the bacillus and its products do not react. Wolff-Eisner has stated that he believes that when tuberculin is present in large quantities, it being manufactured in the body, that the addition of tuberculin from without fails to produce a reaction. Then Calmette states that he and his co-workers have failed to obtain positive reactions in guinea pigs into which a large amount of tuberculin had been injected, though the reaction was positive when a small amount of tuberculin had been injected. Roseneau has demonstrated sensitiveness to the toxin in healthy individuals, obtaining reactions, with the same tuberculin following previous instillations, in perfectly healthy physicians, these physicians all being employed in the Public Health and Marine Hospital Service. We have observed the same. This opens up the question of hypersensitization, and points to two limitations in the application of tuberculin for diagnostic purposes.

The results of such a competent observer as Dr. Baldwin have not compared accurately with the reports of others; while Dr. Derby has stated that results with tuberculin supplied him by Dr. Baldwin have not been as consistent and uniform as with tuberculin obtained from one of the pharmaceutical houses, all of which emphasizes the necessity for uniformity and a standard tuberculin for this test.

Judging from reports, I believe a tuberculin as described by Calmette necessary for the successful use in this method. In making this statement I am cognizant of good reports of competent clinicians in regard to other tuberculin. The tuberculin used by me made after his method, was very satisfactory. I want to emphasize the fact that such solutions are easily contaminated and organic life readily develops in the solution.

Another point to which I wish to direct your attention, is the bad results reported following the application of the tuberculin to the eye. I do not believe this test has a place in ophthalmology. I have used the test in four cases of diseased eyes, but have refrained from further use of it because of the bad results reported by Knapp, Ramsey and others. We have been taught that tuberculosis of the eye is a rare disease. Stephenson's statistics give one case in 1,500; others vary, Hirschberg giving one in 5,000. It must be more common than this. Wolff-Eisner thinks that the pathological picture of the tubercle is caused by the quantity of tubercular material deposited, and on this basis we can readily explain the phylctenule and interstitial keratitis, both quite common. If the tuberculous deposit is small, or the toxin to the part is small, a typical tubercle may not be produced, but such formation as cited may take place, i. e., lymphoid cells gather and a typical tubercle is not formed. The cases of interstitial and phylctenular keratitis pro-

duced by instillation of tuberculin, add much evidence to this statement of Wolff-Eisner.

If interstitial and ulcero-vascular keratitis, irido-cyclitis, choroiditis and scleritis can be produced by the instillation of tuberculin, as reported by de L'apersonme, Dr. Knapp, Mr. Treacher Collins, Dr. Hiram Wood, Ramsey, Woodcock and others, a warning must be given against the application of this test. There is little doubt that the phylctenule is tubercular; that sclero-choroiditis is tubercular, is now almost beyond doubt. Stock has produced in rabbits sclero-keratitis by the injection of tubercle bacilli into the blood. No less an authority than Mr. Treacher Collins states that sclero-choroiditis is always tubercular and can be diagnosed from the pathology and symptoms without the use of tuberculin; consequently, to the oculist the test is useless in the differential diagnosis of these conditions.

Another objection to the use of this test has been pointed out by several and that is: If tuberculin is to be used subcutaneously, the conjunctiva should not be sensitized, as a reaction will surely occur even though quite a period has elapsed since the application was made. The experiments of Roseneau, referred to, give a limitation in this connection. I have seen healthy individuals sensitized to tuberculin from inunctions of it and from applications after the manner of Pirket.

The more I see and the more I read reports on application of tuberculin to the conjunctiva, the more I am convinced that tuberculin diagnosis and tuberculin therapy should be in the hands of experts, and the general practitioner cannot look for a ready-made diagnosis from its use, as limitations affecting other tuberculin applications, affect this method. Its use involves a thorough knowledge of immunity and allied subjects, and the use of it should be confined to the hands of men who have had the best training in these.

Personally, as I said before, I have had no bad results; the reaction is ideal when slight, and fully justifies Calmette's claims for it, but it has limitations; there are certain dangers attendant upon its use, and there are other methods of diagnosis and uses of tuberculin for diagnostic purposes practically free from harm to the patient.

"A SUGGESTIVE FORM OF GOVERNMENT CONTROL OF THE PUBLIC HEALTH."

By James H. Morroway, M. D., of Ridgeway, Mo.

The sanctity and conservation of human life being indisputable facts, not only as affecting the perpetuity of the government, but principally the sum total of human happiness, individually and collectively; and it being discernible that conditions are fast developing that will cause the government to assume the duties of safeguarding these elementary requisites for its existence if for no other reason than that of economy,—upon which rest the principles of good government, which is but an organization evolved for the purpose of securing and giving such means as "permit of life, liberty and the pursuit of happiness," and which, after all, is its function, operative in two ways, by and for the people,—therefore, we must realize the obligations of the government to the individual, and cause a faithful discharge of such a duty, as regards matters of health.

The constant shifting of the burden has not caused it to resolve itself—far from it—it has only added more perplexity to the situation; hence it is the government that must eventually grapple with the problem and cause its solution; because of its national aspect, it must have the sanction of authority from the people in doing so; and once obtained how are we, the medical profession, going to conduct ourselves towards the new order of things?

The medical profession has accomplished much, and is to be congratulated on its work, but we must acknowledge that it is impossible for us to accept the burden any longer; it is an injustice, though we took upon ourselves another's duty—we are crushed and cry out for aid—our altruism led us astray.

While upon our shoulders rests the responsibility, from our primary relations with the people; we accept it; but, only the responsibility of the operation, not the burden itself; we being as workers in a mill—the owner of the mill being the government, that is, the people. And if all this should come to pass, how are we to secure an adjustment between all concerned—how cause an immediate and satisfactory operation of such a contemplated action?

It is unwise, and dangerous, and better to at once stifle any attempt to establish a bureau of health, without reckoning with the country practitioner—without making him a part; so that will warrant immediate dismissal from our minds once and for all. So in consequence, would it be advisable to allot or parcel out to each man so many square miles or

acres over which he would be sanitary inspector? That is impossible, the many and varied problems of individual differences and preferences—removals—and all those things that are so vexing, that pertain to the present day practitioner and his work. But an easy, practical, and ultimate solution is rendered by our geographical divisions and subdivisions; our entire country being divided up into states and counties makes easy the working of the plan.

This plan permits of all individual freedom of all concerned.

The doctor remains or goes where he pleases—the patients choose whom they will—merit comes into its own after all, and that is the true basis. Thus the doctors and people remain as they are, both knowing that the government is now the operator and that such regulations obtain. In each county have a competitive examination for the position of subchief inspector—his duty being to receive weekly reports from all the county physicians—checking them up and forwarding them to the state chief—a position similarly obtained or a government officer stationed within the state.

This checking up will dispel all suspicion, compel honesty, as if the diagnosis after the third visit is unascertainable, the attendant must call another physician or county subchief, and he in turn a state department chief, of whom there shall be specialists in each branch of medicine, with powers of delegation provided he is busy—the national state chief being chairman of the board. The positions are each held for periods and conditions varying, and compensation for some or all from the local practitioner to the various heads, being compulsion of all sick or injured to report themselves, whether the trouble is minor or otherwise. The people being furnished with stamped books by the government, which makes a fair schedule of prices—and pledging itself thereby to pay one-half of the bill—these cards redeemed by the government when duly countersigned; or a tax. The state national chief reports direct to the United States Bureau of Health—then we have complete surveilance of the medical man and his work from beginning to end.

A check on the local physician being an investigation and fines, but continued offense revocation of license. And here, also, is brought the prospective medical student and medical colleges under control.

During their unemployed time the county men with the subchief, attend to sanitary measures; the county subchief, preferably located at the county seat—to have all the armamentarium required for work possible to be done by the local men, the state's department chiefs or their delegates. A county hospital, without the usual opprobrium complete in all details, for those demanding institutional work.

A like assortment of drugs of utility.

This plan removes all the evils about and within the profession to-day, the knowledge of the governmental disposition towards offenders would not permit of many abuses.

That this would do harm to other hospitals or individuals, bequeathing to charitable purposes or institutions, is not true—as patients can use their own judgment whether they will go or be referred wherever their best interests would require and money given to the government would bring more lasting fame and yield other and greater benefits.

Our present civilization, at best, is only a mass of artificialities and only for the time being—as during its onward march, new problems, deemed strange at first, but ultimately solved, are the best or height of accomplishment. Therefore there must be given a new version to the statement of "a government supported by the people, instead of the government supporting the people," and so the government must be such, as would discharge its duties and effectively husband its strength for, if the expenditure is greater than the income the result is bankruptcy.

CARE OF THE BREASTS AND NIPPLE DURING PREGNANCY AND THE PUERPERIUM.

By Percy H. Swahlen, M. D., St. Louis, Mo.

The etymology of our medical terms is always of interest, and if we trace the latin "mamma" back to the Greek μάμμη we find both words used in the sense of our English word breast. The diminutive mammilla was used by the Romans to mean either the nipple or the male breasts, while the Greeks employed the word μάστοι (occasionally μάζοι) to designate that the nipple was not only included but was to receive especial consideration.

In order to better appreciate the discussion of this subject let us first refer to a few points of the gross anatomy and physiology of the parts. The two large semi oval glands with flat bases, termed breasts, rest upon the pectoral muscles from about the third to the seventh rib vertically and horizontally from the axilla to a furrow parallel to the sternum, known as the bosom. These limitations remain true in the large majority of cases and when old practitioners speak of having seen breasts that could be thrown over the shoulder they are dealing with the depths of the organs which differ greatly. This third measurement is not so much dependant upon the acinous glands composing the parenchyma as it is upon the interstitial and subcutaneous fat which later becomes absorbed and leaves us the condition common to old age or to younger women suffering with chronic wasting affections. I use the term affection advisedly for I have just confined an unmarried Hebrew girl of 17 years who claims to have lost considerable weight during pregnancy and whose flabby breasts hung down to the costal margins on each side. The glandular structures were fairly well developed and an apparently normal amount of milk appeared on the fourth day. In this case no anatomical abnormality was found, but patient was melancholic and suffers with anorexia and constipation, although taking sufficient physical exercise daily.

Because of the intimate connective tissue relationship among the lobules of the glands it is impossible to separate them into so many lobes but the latter are supposed to be represented by the milk bearing ducts, sixteen to twenty in number, which dilate under the areolæ to form reservoirs before opening upon the surface of the nipple. One opening often serving for two or three ducts. Nor is it to be forgotton that the so-called "milk glands," or tubercles of Montgomery, connect with the lactiferous tubules.

Beneath the areola and in the nipple no fat is to be found but a comparatively large amount of involuntary muscular fibres. Those in the

nipple extend circularly and longitudinally, the former causing a prolongation, the latter assisting in the hardening condition brought about by external irritation.

The abundant blood supply of the glands comes from the internal mammaries, the intercostal and axillary arteries. Gray states that a complete venous circle exists about the base of each gland and Haller and Sebastian describe venous circles of the areloæ.

The lymph glands of the breast connect not only with those of the axilla but also with those of the mediastinum and with one or two glands lying beneath the clavicle.

The nerves are derived both from the cord and from the sympathetic system—the former by way of the intercostal and the pectoral branches, the latter from the thoracic plexus. Of these only the sympathetic and the branches of the cutaneous pectorals preside over the glands and accompany the lactiferous tubules to the nipple, some ending just beneath the cutis and others in it.

Regarding the physiology it suffices to say that beginning with the last of the second month of pregnancy the woman becomes conscious of an odd sensation in the breasts due to pressure upon the nerves by the enlarging secreting cells and the increasing fat deposit. Soon a thin watery fluid, called colostrum, or the "advance milk," may be expelled. This forerunner of the true milk is composed of fat globules and an albuminous fluid and differs principally from its successor in that the albuminoid capsules have as yet not surrounded the fat globules—shown by the ready coagulation upon heating.

With these few remarks we are now ready to advance our hygienic treatment, and the nipples attract our immediate attention. The exuding colostrum dries readily in the folds of the nipple and the resulting yellow crust adheres closely to the delicate epithelium causing an exfoliation of the same. In order to avoid this the cutis from the middle of pregnancy on should be washed twice daily, first with a mild soap and warm water, followed by cold water. If the nipples be small or inverted the involuntary muscle fibres should here respond to use and develop similar to those of the heart. Therefore, drawing forth of the nipple for five to ten minutes after each cleansing, if necessary at first resorting to the use of a suction agent, appeals as a much more natural process than the application of alcohol or tannic acid, which, if strong enough to accomplish the desired effect, destroy the tender epithelium and relieve the skin of its lubricant.

The rapid enlargement of the breasts does not permit the skin to adapt itself as is desired, so in order to avoid the striæ and the often unpleasant nervous sensations gentle massage with a softening agent is advised. Whether an oil or fat is used is immaterial so long as it contains no harmful ingredient. After such a treatment warm water and soap remove the excess of fat from the skin and then water at a temperature of 45° F. leaves the part soft, clean and firm. Water at this

temperature is cold enough to cause increased vitality of the skin and yet does not tend to produce any unpleasant synchronous uterine contractions. In two cases that I have recently seen where olive oil had been used without freeing the skin from the excess, small pustules formed in the vicinity of the nipples and burrowed quite deeply into the subcutaneous structures before healing occurred.

In applying massage during pregnancy we must keep in mind that if the breast becomes tense in spite of the foregoing treatment we probably have to deal with a venous congestion and our rotary massage should be so carried out that the greatest pressure be exerted at the base of the gland.

Should the breasts become uncomfortably heavy a bandage or support is indicated and in considering the same three questions must be answered:

1. Is this woman to nurse her child?
2. Age of patient?
3. Condition of breasts during previous puerperia?

If the first question be answered in the negative there is no objection to a firm binder, not so tight, however, that the respiration be hindered. If answered in the affirmative, pressure, as far as possible, is to be avoided, the support partaking of the nature of a sling.

The age of the patient concerns us because the majority of elderly primiparæ have trouble in establishing a flow of milk sufficient to nourish their offspring for the first few months, and the increased blood supply is to be encouraged rather than hindered.

Under number three it is not the history of an infected breast at a previous puerperium so much as the quantity and quality of the milk at such times that invites our attention.

During the first twenty-four hours of the puerperium the management is practically the same as during pregnancy with the exception that after twelve hours the child may be put to the breast.

If the breasts during the puerperium cause the patient no inconvenience I use no bandage, feeling that the action of the air upon both breast and nipple is conducive to much better results than is derived from hot or irritating supports. During the second twenty-four hours I see no disadvantage in placing the child on the breast every three or four hours. True, practically no nourishment is to be obtained, but as the child mouth is cleansed with a 4% boric acid solution, just beforehand, and the nipples and areolæ disinfected in a similar manner, both before and after nursing, the danger of infection is small and great benefit is derived from the fact that the nipples have accommodated themselves in a way to the act of nursing before the milk appears. In other words the unpleasant symptoms usually present with the coming of the milk are not aggravated by the act of nursing. If these symptoms be present in the form of hard, red, exquisitely tender breasts, slight rise of temperature and a general feeling of discomfort on the part of the

patient we probably have to deal with a passive congestion and our treatment resolves itself into (1) massage till the breasts are less tense; (2) firm but not too tight binder; (3) ice bags on breasts; (4) catharsis, to a medium degree; (5) if very nervous, patient may receive 15 to 20 grs. of a bromide solution; (6) child placed on breast as if no discomfiture.

If, on the other hand, there is no congestion but simply a feeling of uneasiness and a slight rise of temperature, Olshausen states that the application of warm wet cloths to the breasts will often alleviate the nervous symptoms and assist in the "coming of the milk."

Although the breast pump is often used in both of these conditions, I believe it of little value as the amount of milk drawn is usually of small amount and the congestion is more often increased than diminished.

Of late some have advanced the theory that if a rise in temperature exists synchronously with the appearance of the milk they are to be considered separately as the fever means infection. This is not believed by most thinking obstetricians and Olshausen says that a temperature not exceeding 100.5° F. is often present without any other evidence of infection. Just how this phenomenon occurs we do not now, but it is a fact that nervous individuals are more prone to a fever than their phlegmatic sisters.

As regards catharsis, castor oil is given the preference because it produces a watery stool with less griping than the other agents.

If for some reason the mother is not to nurse the child, our management, beginning at the end of the third stage, differs. Sterile cotton is now placed on the outer side of each breast and a suitable piece between them, the nipples are covered with sterile gauze and a *tight* binder is applied. If no signs or symptoms of discomfiture appear the binder is tightened as it becomes loose or uneven and remains in place for a period varying between one and two weeks, depending on the case, being opened only occasionally to cleanse the nipples. If the "coming of the milk" gives rise to signs or symptoms of a serious nature, the same treatment is to be instituted as for the nursing mother, with the exception that strong, not medium, catharsis is recommended.

Belladonna and camphor ointments are contraindicated because if used in excess the damage to secretion is long continued and who can say what the limit for each individual case is?

It is often the case that a child prefers one nipple because milk is obtained from this breast with less effort. He should not be humored in this and should be made to nurse on this side, even if hunger must be resorted to. It is sometimes advisable to place him on this breast twice in succession, using the breast pump on the other. If this be not done the one breast soon ceases to secrete and later one breast proves insufficient. A little sugar water on the nipple often works admirably.

As soon as a nipple becomes sensitive or shows a fissure the child should nurse through a shield till the sign or symptom is passed, or if the condition becomes worse the child should not nurse it at all. Cleanliness of the part and the removal of the traumatic etiology suffices without the application of chemicals. If we meet with an infected breast the present treatment is to produce multiple punctures and enclose the entire breast in one of Bier's glass bells. Blood, pus and milk are all drawn off by this method and the congestion is relieved. Ice bags to the breast and purgation with bed rest complete the outline of treatment.

Suppose, on the other hand, that despite our use of hot cloths the breasts on the end of the fourth day show only a small secretion and the expected fullness of the parts is lacking! Here we have to deal with a disturbance of secretion and through elimination diagnose faulty glands. We are told that first of all the patient must receive a rich diet. This is a broad statement and we know so little about the foods producing milk that it is uncertain. The quiet, easy-going country woman will probably give more milk if taking the diet to which she is accustomed—salt pork, beets, cabbage, etc.—but imagine a physician prescribing the same for a nervous woman of one of our large cities.

Our problem is first, how to stimulate the glands and massage, electricity and placing a large, strong child to the breast at times improve the condition. A late theory is that the loss of nitrogen during pregnancy is great, and that if we supply a highly nitrogenous diet we will be rewarded. In several cases I have employed beans, peas, lentils, various meats and an abundance of cocoa, milk, malt and water, and in addition Mal-tropon. The last named is said to be a preparation of malt with the nitrogenous compounds of grains and is pleasant to take. In the majority of the cases no artificial feeding became necessary, but I am prone to believe that the condition of the nervous system plays the principal role.

If instead of having too little milk the opposite be true, or we desire to suddenly stop the secretion, tight bandaging and purgation are the most valuable means but do not always bring about the desired result. In this connection some report splendid results from the use of potassium iodide. Abegg used douches to bring the blood to the uterus and to locally stimulate the same, while Gottschalk reports scarification of the cervix a good means to bring about the desired result.

TINEA SYCOSIS.*

By T. F. Lockwood, M. D., of Butler, Mo.

The subject of my choice for this occasion is one of no little importance to the diagnostician, as there are so many forms of eczema to claim attention of the dermatologist. I believe three-fourths of all skin lesions may rightly be classed as one form or another of this common complaint. So predominant are these eczematous eruptions that we have become too prone to call all skin troubles, regardless of location and severity, eczema.

Tinea sycosis, or ringworm of the bearded region, is not so common by far as tinea capitis, tinea circinata and other forms of ringworm which take their name from a resemblance of something else and from a certain favored location upon the body. Like eczema, the varieties are so numerous and so varied in their pathological aspect, that I shall not undertake to describe any of the many phases of the disease except the variety commonly called "barber's itch." However, I shall state in passing that all forms of ringworm are either of a parasitic or microbic origin, a specific fungi, if you please, very persistent and contagious in nature. There is a form of this facial malady called "sycosis vulgaris," which is non-parasitic, but microbic instead. This variety is characterized by a chronic inflammatory affection of the hair follicles of bearded regions and in extensive cases it is said to involve the eyebrows and other hairy regions remote from the head, but I have never seen so extreme a case as this. This form is not met with so frequently as other varieties of the disease, owing, perhaps, to being less contagious. It is indeed fortunate for masculine kind that this is so, for being persistent as it is in its course, lasting sometimes for years, a victim of the disease would be certain to inoculate many during the prolonged career of his affliction.

As we are not called upon to treat this form of sycosis as often as some other varieties, and as the treatment is practically the same in all cases, I shall pass on to the more common complaint.

I shall first call attention to the fact that every time we diagnose a case of barber's itch, and so inform the patient, just that often we are going to make an enemy of some barber. The patient invariably loses his temper and proceeds to take recourse on the barber who always resents the accusation by heaping epithets upon the doctor and severely criticizes his diagnosis. Therefore, it is important to choose well your words in informing your patient as to the real nature of his ailment. If

*Read before Bates County Medical Society, Butler, Mo.

he is one who cannot be restricted to a reasonable compromise of the situation it is far better to confine yourself to technical phrases than to tell him outright that he has barber's itch. If you are governed by certain conscientious scruples and must tell him in plain words the real cause of his facial blemish, then you must be sure beyond a doubt that you are correct in your diagnosis of the case that you may be prepared to meet any emergency or unexpected controversy arising therefrom.

There are two plain varieties of tinea sycosis, the superficial and the deep-seated varieties, both beginning in the same manner and much like ringworm on non-hairy parts; as one or more rounded, slightly crusty hyperemic patches more pronounced peripherally than in the center. Several near-by patches may coalesce, giving rise to large irregular areas. Sometimes there is slight itchiness and in the early stage I have seen this annoying feature intense. The hair follicles are more or less involved, and resemble similar changes to those observed in scalp diseases. They are easily extracted; in fact, in many advanced cases some of them drop out spontaneously. The malady may thus continue for an indefinite period, seldom ever showing a tendency to recovery without treatment. In the superficial variety there is but little disposition to pustulation, but in some instances the process involves the tissues more deeply, giving rise to thickening and infiltration, finally developing into the nodular form or deep-seated variety. This type occasionally begins similarly to sycosis vulgaris, but after remaining superficial for a variable time, shows a decided, and often rapid, tendency to extend down into the hair follicles and tissues. As a result of such deep involvement of structure, subcutaneous swelling ensues and the parts assume a lumpy and nodular aspect, suggestive, when extensively developed, of a group of furnucles or cutaneous abscesses. So large and so many are the perforations on the summit of some of these abscesses as to resemble the formation of a carbuncle crater. In fact they have been mistaken for carbuncle and treated as such. These hard nodules, after a time, soften and break down, discharging through these follicular openings, a purulent material which if let alone will dry, forming a thick adherent crust over the field, favoring, very much, parasitic propagation beneath by hindering direct applications of such means necessary to destroy the parasites. This form is contagious and may be conveyed by direct contact or through the medium of toilet articles and wearing apparel. It is conveyed sometimes from hotels where many are permitted to use the same face towels.

While barber shops are the most frequent source of infection, yet they cannot be held responsible for all cases occurring in our practice, as we know it attacks individuals who do not frequent the barber shops, hence the infection was due to a different cause.

With all the modernized barber shops and with extreme precaution practiced in the way of cleanliness by skilled barbers, yet we have this

condition to deal with. Subjecting shaving mugs and brushes to extreme heat is good as far as it goes, but it is too limited in results. When a barber does all this in addition to using clean towels on his customer he has done all he knows to do as far as asepsis goes. What more can the poor barber do to protect his customer from this loathsome malady? He has scalded his mug and brush or used the customer's private utensils; he has scalded or disinfected his razor and still he may have carried a contagion to his customer's face. How did it occur? I shall endeavor to explain how he may have inoculated his unsuspecting customer even after having adopted all the above rules of cleanliness. He may have shaved a former customer with an unnoticed incipient and insignificant pustule on his face during which he stropped his razor several times after cutting into a pustule, carrying the germ to the strop and spreading it about each time to reinfect his clean razor, or for the next customer he shaves. This source of infection is overlooked by most barbers and they wonder how their customer could have contracted the disease in their shop when so much pains had been taken to give a clean, hygienic shave.

Until some plan is adopted by which the razor strop may be systematically disinfected, we may expect to be confronted with this stubborn malady called barber's itch.

If barbers were to immerse their razor in pure alcohol before stropping, and occasionally the strop, especially after shaving suspicious subjects, I believe it would prevent the spread of this contagion. There is no better chemical germicide than pure alcohol. I believe barbers should take sufficient instructions in dermatology as to render them able to recognize all contagious skin diseases of the face in its incipiency, that they may avoid scattering a disease that is wrought with so much pain and disfigurement. My method of treatment is somewhat different from the usual course laid down by text-books. However, I resort to some of the antiseptics used in the majority of cases, but use them for a different effect. The first step taken is to saturate a bunch of absorbent cotton with pure grain alcohol and use as you would a sponge, mopping the parts thoroughly, removing any crusts that may be present. I keep up the alcohol irrigation by squeezing the cotton over the field of operation and proceed to remove all hairs from the diseased surface, and for a short distance beyond the diseased margin, all the time working under alcohol irrigation. I look for new areas, and if found, I remove all hairs from the new foci in the same manner and touch the spot with pure carbolic acid from the end of a toothpick. When the spot turns white from the acid, I apply more alcohol as before and finish my dressing by dusting on a powder composed of equal parts of calomel, boric acid and pulverized acetanilid. This drys the oozing of serum that always follows the pulling of whiskers. I use this as a dryer as well as for antiseptic measures. It prevents the secretion from coming in contact with healthy

territory and infecting new areas of skin. This artificial crust must be removed at each subsequent treatment that you may better inspect the parts, and at the same time allowing you to remove any hairs that may have grown out in the interval. If you will follow this course of treatment, applying it about every other day, you will have but little trouble preventing extensive spreading and cure your patient without leaving scars.

A Physician of Souls.—It was on the North Sea that Dr. Grenfell served his apprenticeship as a missionary to the deep-sea fishermen. An Oxford graduate, trained in surgery at the great London hospital, he was "converted" by a sermon of the American revivalist, Dwight L. Moody, which he happened to hear one night in London, and went out to the Doggerbank on the medico-missionary ship that ministered to the physical and spiritual needs of the hardy Englishmen who reap the harvest of the sea in those perilous waters. The establishment of this service was largely due to the efforts of the famous surgeon Sir Frederick Treves, and the service itself became world-famous in 1904, when the mission ship went to the rescue of the innocent victims of Russia's armada, just starting off on the long journey that was to end in its destruction. It was after a "heart-to-heart talk" with Sir Frederick that the young surgeon, who had already determined to devote his life to helping his fellow-men, decided to throw in his lot with the deep-sea missionaries.

The work on the North Sea being in competent hands, Dr. Grenfell soon turned his attention to the urgent needs of the fisherfolk on this side of the Atlantic. Medicine and surgery were known to the dwellers in Labrador only through the visits of a doctor who came on the mail boat at intervals of three weeks during the few summer months when navigation was possible. In the matter of religion their condition was no less benighted. In both respects the coming of Dr. Grenfell has wrought an almost miraculous change. At comparatively accessible points he has established a chain of hospitals where religious services are also held. All summer long, in his steamship Strathcona, he cruises up and down the coast on errands of mercy to the fishermen and their families; in winter he visits them at their snowbound homes, and on dog sledges gathers into the nearest hospital those who need to be there. He has also established a number of coöperative stores, and by so doing has relieved the crushing poverty that was driving many of them to despair. On his summer voyages he carries books about with him, and leaves them at certain stations till his return. He is, moreover, vested with magisterial authority, as most of his parishioners are beyond the reach of the courts. But he is a missionary first and last, and regards the saving of bodies as merely incidental to the saving of souls. It is for this reason that, on his recent winter sojourns in the United States, he has spoken chiefly in the churches and been heard mainly by the devout.—Joseph B. Gilder in the June *Century*.

ACUTE INFLAMMATION OF THE MUCOUS MEMBRANES OF THE UPPER AIR PASSAGES.*

By W. K. Statler, M. D., Oakridge, Mo.

Perhaps in the whole realm of conditions where Nature departs from the paths of rectitude, she does it in none so frequent as in acute inflammatory disorders of the upper respiratory mucous membranes.

Among human disorders, what is more common than a "common cold," yet, strictly speaking, the ordinary "cold" is but an acute inflammation of the mucous membranes of the upper air passages. When we consider, however, the physiology of the upper respiratory apparatus and recall the fact that over these sensitive mucous membranes must daily pass thousands of cubic feet of air, laden with countless millions of micro-organisms, besides particles of dust and irritant vapors, we almost wonder why these acute attacks are not more frequent. This is due, in all probability to the peculiar physiological ability of the nasal mucous membranes to filter out and, to a certain extent, render inert these ever present foes. So rare indeed does an infection occur on the wounded surface of the nasal mucous membranes, subsequent to the many surgical procedures practiced by our nose and throat specialists, that we have come to believe that one of the functions of the nose is to sterilize the inspired air.

While not of great moment, outside of slight suffering and considerable inconvenience, "colds" frequently lay the foundation for graver ills and thus act as a signal of warning lest such a degree of depression be allowed that a soil be prepared for the seeds of malignant, acute or chronic disease that may, in the end, prove mortal.

"Colds" are, without doubt, pure infections, but the bacteriology of this question has not been definitely settled. Like pneumonia and acute articular rheumatism, it seems that there is a variety of different organisms that may produce the condition; so at this time we do not consider the ordinary "cold" as a distinct specific infection. There is one variety of "cold," however, that may be classed as a specific infection, viz., that caused by the Pfeifer organism or the condition we call la grippe. In my opinion "colds" are, for the most part, contagious, although this is an unsettled question.

The direct cause being established as infection by micro-organisms, that which is of more practical interest is the consideration of the indirect causes. The indirect causes of "colds" are legion, but chief among them I believe to be the old accepted doctrine of chilling of

*Read at the Meeting of the Cape Girardeau County Medical Society, May 10, 1909.

some surface of the body with its consequent disturbance of the equilibrium of the circulation.

I am a firm believer in free ventilation but I also believe that a cool draft of air on the resting or fatigued body is distinctly an invitation to attacks of acute inflammation of the mucous membranes of the upper air passages. In spite of the dictum of able writers to the contrary, personal experience has time and again taught me that sitting quietly reading or resting in a cool draft of air, especially after exercise, will precipitate an attack of acute rhinitis. Of course the liability to these acute attacks depends greatly upon vital resistance and those predisposed to "colds" are those who indulge in such indiscretions as sleeping in ill-ventilated rooms, wrapping the body with heavy mufflers and other heavy garments when climatic conditions do not justify it, avoidance of out-door exercise, avoidance of regular bathing and in those whose mucous membranes of the nose is the seat of chronic inflammation, spurs or polypi and in those who have been endowed by nature with feeble powers of resistance.

But the question comes to us all, why should the nasal mucous membrane alone so often have to bear the brunt of this disturbed circulation? This can be explained only by referring the matter to a reflex or to the sympathetic nervous system.

After the chilling of the surface of the skin, whether it be that of the feet, of the area between the shoulder blades or even of the scalp after a hair cut or shampoo, the equilibrium of the circulation is disturbed and the first manifestation will be a local anæmia of the nasal mucous membrane with its consequent lowered vitality and here in the presence of myriads of ever present foes the infection takes place. Nature responds to this insult by bringing bands of leucocytes and stationing them at all points within the tissues comprising the nasal mucous membrane in order that the invading enemy might be repelled. This response of nature to irritation and infection is but the steps of an acute inflammation.

This warfare continues between leucocytes and organisms for several days; sometimes the enemy seems to be in command of the situation and at other times it seems to be in retreat until by gradual steps, and thanks to the opsonic power of the blood serum, which renders the organisms much more attractive and palatable to the hungry leucocytes, the organisms become overpowered and the battle ends.

The mucous membrane, however, must pass through the trying days of reconstruction; the waste of war, in the shape of dead organisms, cast off epithelial ramparts, fibrinous masses and overloaded leucocytes, must be cleared away and thus the mucous membrane is finally restored to its former condition; only to be the scene at some future time of a repetition of a similar fray. This, in short, is the succession of changes that constitutes an inflammation of the mucous membrane of the upper air passages.

The symptomatology of a "cold" even by the laity is to well known to justify much comment, but it may be said that all the functions of the nose become impaired; conduction of the secretion first becomes disordered; then olfaction becomes less acute; then follows disturbance in phonation and audition; respiration may become so embarrassed that mouth breathing is necessary; there is constant irritation in the nose, eyes and lachrymal ducts, with a desire to sneeze or blow the nose; there may be headache, due to the closure of the opening leading from the frontal sinus; there may be slight fever with its consequent chilliness and aching back and limbs; there is loss of appetite, painful swallowing, sometimes earache, and almost everything that would contribute discomfort to the unhappy victim. The usual termination is a complete subsidence of all symptoms in from four to ten days. The immunity does not seem to last long as attacks are prone to recur and until we become able to produce climatic conditions to order or make a radical change in the long established habits of the children of men, we will continue to experience from time to time the blowing and sneezing, the running and tickling, the burning and smarting, the scalding and snuffling of the acutely inflamed nose.

THE IMPORTANCE OF EARLY ATTENTION IN ALL CASES OF RECTAL DISEASE.*

By James C. Minor, M. D., Chillicothe, Mo.

It is a fact, in my opinion, that diseases of the rectum and anus, in all their various phases and characters, are most wonderfully neglected, not only by the profession in our own country, but in foreign countries quite as well. I am not prepared to say why the profession in general is so dilatory in the recognition of this fact. While in London last season I was surprised to be informed by some eminent operators that no one in that great city had taken the place made vacant by the late Alingham Brothers (Dr. William and Dr. Herbert), but notwithstanding this, London has some very able proctologists.

My experience in proctology, covering a period of seventeen years, has convinced me, beyond question or doubt, that the majority of the medical profession to-day does not begin to recognize the importance of this class of diseases, and the sympathetic effects, to say nothing of the importance of early attention in such cases. This applies not only to the country practitioner, but to the practitioner in our cities also. For example, I have seen many cases that had been taking treatment for hemorrhoids, when a carcinoma of the upper portion of the rectum, or perhaps of the sigmoid flexure, had been overlooked by the attending physician.

I am not offering this in the nature of a criticism, but as a plain fact, which conclusion my experience has caused me to arrive at. I would say, conservatively, that ninety per cent. of the cases of malignancy of the rectum I have met with, have given me no history of heredity at all, but almost without exception, a history of some minor affection of the rectum, or anus, preceding the malignancy. I do not pretend to say that all cases of hemorrhoids will in time develop into malignancy, but that all patients who are suffering from not only hemorrhoids, but who may have any disease of the rectum, or anus, benign in its character, are subject to the development of malignancy at any time, as a result of the stool passing over the diseased surface, thereby acting more or less as a constant irritant to the dieased area.

I am thoroughly convinced that a simple case of hemorrhoids can act, either directly or indirectly, as a predisposing cause of malignancy of the rectum. The general tendency is to treat rectal diseases as a class not requiring much attention, or skilled service; that they are of little consequence.

*Read before the Livingston County Medical Society, January 13, 1909.

It is a common occurrence when a patient consults his family physician about any rectal trouble he may be suffering from, to take a brief history of his case, or perhaps no history at all, but accept it as a matter of course that the patient has hemorrhoids, and without so much as making a partial examination, proceed at once to write a prescription for some soothing lotion to apply externally, or perhaps a suppository to be inserted into the rectum, which may give temporary relief. Thus the patient drifts along until he may have another attack, in many cases losing time that may be very valuable to his comfort and life, and possibly the opportunity of effecting a complete cure, by not making a careful and thorough examination, arriving definitely at the true diagnosis of the case, and operating accordingly; not just operate and leave the patient for a week, but follow the case up with daily dressings. Often the care the patient receives after the operation is more important to the desired outcome of the case than the operation itself.

Too often is it the case that patients drag along for months and years, taking treatment for neurasthenia, lumbago, constipation, anemia, dysentery, and numerous other affections, when the seat, or cause of the whole trouble is in the rectum, and can be corrected and cured by operative procedure. The amount of pain the patient suffers is no indication of the severity of the case.

Thus a derangement of the rectum that may seem very trivial, indeed it may not even be painful at all, may be causing serious disturbance in some other organ. The very decided sympathetic reflexes in rectal diseases may be easily accounted for, when we think of the relationship of the sacral plexus, spinal cord, and the brain. If the profession in general could be aroused to the magnitude of the importance of not only early attention, but intelligent attention in these cases, a world of suffering would be avoided and the lives of thousands saved from an untimely grave.

OUR COUNTY MEDICAL SOCIETY.*

By J. W. Clark, M. D., Joplin, Mo.

Our County Medical Society at present in its membership comprises approximately one-fifth of the total number of eligible physicians of the county.

About half of this small fraction represents the active regularly participating membership of our Society.

Our regularly participating membership therefore represents about one-tenth of the eligible list.

This is appalling in the extreme to contemplate when we reflect and behold the multitudinous advantages to be derived from an active regularly participating membership.

These advantages are so obvious that it would seem not only superfluous to rehearse them but a flat reflection on the intelligence of any of my hearers who may not be participating members were it not that such physicians for some reason persist in neglecting their duty to themselves, their fellow-practitioners and their patronage by neglecting to become participating members of the Society. Therefore, I feel justified in rehearsing some of the advantages of medical meetings to the regular participants.

In the first place we grow better acquainted and therefore become better friends and more willing to pull together harmoniously in our daily practice.

In addition to that, the frequent association of physicians and surgeons in regular meetings for the consideration and discussion of medical and surgical subjects, obviously broadens all those participating by reason of the fact that the subjects are discussed from so many viewpoints.

It is quite apparent how participation in such work keeps the doctor from drifting into routine grooves that breed only stagnation.

These pathways or grooves grow deeper and deeper year by year, as the solitary physician plods in them, until he becomes unable to extricate himself from them, however inviting may be the newly-made highways on either side.

Regular participation in the Society work prevents this, as many helping hands are extended to aid each member.

The "one-idea" doctor is always a dangerous doctor. The doctor who participates regularly in medical society work is in no danger of becoming a "one-idea" doctor.

*The address of the retiring president.

The varied ideas of the many are brought forcibly before him by introducing other avenues often more direct than the little pathway he has been plodding.

Dr. McCormack, who certainly knows more about the value of medical society work than any living man, tells us that if properly participated in, its value to such participating member might well be compared to the value to be derived from a post-graduate medical course.

We physicians of Jasper county are particularly favored by street car facilities for meeting together. Those of us who do not participate can only blame our individual selves.

When we see that the busiest men in the profession in this and other countries are participating members of medical societies, we cannot accept the "too busy" excuse any longer.

You will note that I have been describing the benefits of the regularly participating membership.

The non-participating member certainly is aware of the benefits to which he is entitled.

An occasional attendance will not suffice any more than an occasional meal will suffice to maintain the body strength.

With the able men chosen to direct us in our work this year, our membership should swell to include every eligible practitioner in the county before the year ends.

In conclusion let me say that the best New Year resolution any physician can make is that he resolve to be a participating member of his county medical society during the ensuing year.

SELECTED ARTICLES

HODGEN SPLINT.

The following article by Gerald C. F. Robinson, F. R. C. S., of London (Eng.), on "Hodgen's Splint in Private Practice,"* is a very clear and intelligent description of the advantages of the Hodgen Splint, and will, we believe, prove interesting to our readers as showing how this apparatus is esteemed in the surgical practice of English physicians:

"The difficulties of treating fracture of the femur in general practice are considerable, and the methods used many and various. Of all the splints described in text-books, not one is applicable to every case, and each has some serious drawback which detracts from its value.

Most splints consist of long pieces of wood firmly fixed to the patient, and often to the bed itself, making satisfactory nursing an impossibility, which means two months' discomfort for the patient. Another point common to most splints is that the site of fracture is covered up and pressed upon by boards and bandages, impeding circulation and preventing any local treatment, which, in a fleshy part, like the thigh, is very important.

There is one splint, however, invented by Hodgen, an American, which has many advantages and few drawbacks, and which is not used nearly so commonly as it deserves.

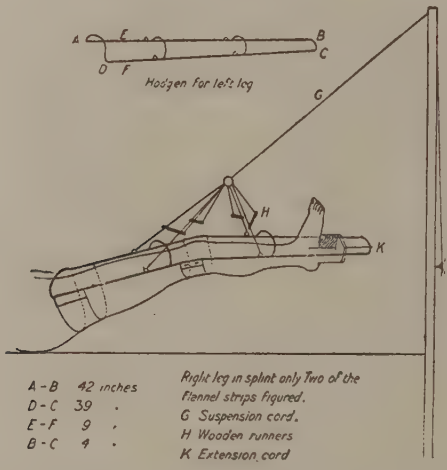
Any man who is able to use a soldering iron, can make it for himself in a short time for the small cost of one shilling. When once made it is practically indestructible, easily sterilized, and applicable to almost every fracture of the femur that can occur.

In order to make the splint, 9 feet of fencing wire, ¼ inch thick, is required for the framework, and a few feet of wire half that thickness for the arches, which should be two in number and so placed that they divide the length of the framework into three equal parts. Lastly, the wire loops should be soldered to the frame, 1 inch above the attachment of each arch; loops are preferable to the hooks usually sold on these splints.

The top end of the splint should be 9 inches wide, the lower end 4 inches. The shorter of the two limbs should be 39 inches long and the longer 42 inches (this size will fit the majority of legs). The width of the splint can be altered to some extent, if required, by bending up or flattening out the arches. The diagram represents the splint with measurements.

*In *The Practitioner* (London) for April, 1909.

In order to apply the splint, a stirrup is fixed with strapping below the knee, having a piece of wood at its center, 3 inches square; this is wide enough to prevent pressure on the malleoli. A cord K is passed through the wood and fastened to the wire midway between B and C, so that when the splint is laid upon the leg with the cord K taut, A lies on the anterior superior spine, and D lies above the tendon of the Adductor Longus. The frame is now bent to the degree of flexion of the knee, which is the most comfortable for the patient, quite irrespective of the position of the fragment which has to be adjusted later, when the extension is being exerted. As a rule, no anæsthetic is required at this stage, and often none is required at all, for, when the splint has been properly applied, the position of the fragments will be found perfect;



if, however, one fragment is engaged in the surrounding muscles, an anæsthetic will be required later, but the splint can be applied first with very little inconvenience to the patient while the limb lies supported on pillows.

Strips of flannel are now fastened along the inner limb of the splint by one end and passing under the leg, the other end is fastened by pins to the outer limb, adjusting them roughly at first to form an even trough for the leg to lie in. Cords are now tied to each loop on the frame, and a small wooden runner, 2 inches long, threaded on each. The free end of each cord is passed through a certain ring, then through the other hole in the runner, and a knot tied.

At the foot of the bed an upright pole is fixed, having a notch cut in its top, which should be 7 feet from the floor; a cord G is fastened to the curtain ring passed over the top of the pole, by pulling on this the leg is raised about 10 inches from the bed, and the cord made fast to the bedstead.

The flannel strips are now adjusted more accurately, and the splint more bent or straightened, as the case may be, so as to bring the axis of the lower fragment exactly into line with the upper. It is at this point that an anæsthetic may be required, it is not often necessary, but reduction of the deformity cannot always be completed without one. Each of the four short cords can easily be adjusted by means of the runners, and should there be any tendency for these to slip, a pin, passed through the cord above, will prevent it.

The foot of the bed should be raised on blocks 6 inches high, and care taken that the end of the splint swings free of ironwork and post. The weight of the limb is the extending force, and the little piece of cord beyond the stirrup is the index of efficient working. It should be always taut.

There are two important points to be borne in mind. The patient must not be allowed to slide down to the foot of the bed, and the top end of the splint must ride an inch clear of the groin. The wire of the splint should not touch the patient at any part. When the fracture is close to the hip joint, very particular attention must be paid to the flannel strips at the top of the splint, as these are the support of the upper fragment. The top edge of the flannel should accurately fit into the gluteal fold, and care taken lest the strips slip down the wire framework. When all the strips are adjusted, they should be sewn on to the splint with thread and the pins removed.

Gentle massage of the thigh, including the seat of fracture, should be started the day after being put up in the splint; this accelerates absorption of extravasated blood, and assists the circulation round the fracture, keeping the muscles from becoming adherent, and maintaining their tone, thus materially shortening the period of weakness for the patient when he begins to first walk about.

There are two disadvantages in the use of this splint; the main one is the necessity for an extension fixed to the leg with strapping; this is sure to drag sooner or later, and requires renewing; also watchfulness is required in order to prevent the strapping from cutting into the skin. The other disadvantage is that the foot and leg are not easy to keep warm in the winter, suspended as they are in mid-air; this can be remedied by keeping up the temperature of the room, by regular massage, and by layers of cotton-wood. Advantages are many:—

(1) The patient can be moved about freely without damage to the fracture, simplifying the nursing; (2) the patient is perfectly comfortable when he gets used to the inclination of the bed; (3) no pressure is exerted upon the site of fracture which can be examined at all times; (4) massage can be begun at once; (5) swelling of the leg is reduced to a minimum by the elevation of the limb; (6) the apparatus is cheap and lasting. Two Hodgen's, right and left, will last a lifetime, and do away with the necessity for a multitude of other splints.

Three kinds of injury to the femur are not suited to treatment by Hodgen's splints; two of them occur in children; the one is separation of

the lower epiphysis, which requires complete flexion for its reduction (Hodgen's splint will not perform its functions if bent beyond a right angle). The other includes all kinds of injury in children too young to lie still, whose limbs are not heavy enough to make a good extending weight; these are best treated by suspension or in Bryant's double splint.

Lastly, fracture complicated by any injury to the leg which prevents the application of a strapping extension; in which case straight wooden splints, like Liston's, must be used, or treatment by position with pillows and sandbags.

A very bad extracapsular fracture, which was so painful that no splint of any kind could be tolerated, treatment being carried out with sandbags and cushions, and a woman, with delirium tremens and alcoholic neuritis, with a simple fracture of the shaft, are the only two cases in my experience in which Hodgen's splint has failed to give a good result."

THE McDOWELL CENTENNIAL.—A notable feature of the annual meeting of the American Gynæcological Society, held in New York recently, was the celebration of the hundredth anniversary of Ephraim McDowell's first ovariotomy. It was doubtless largely owing to their desire to take part in such an interesting commemoration that such eminent European gynæcologists as Mr. Herbert P. Spencer and Mr. Alban Doran, of London, Hofrat Professor Hofmeier, of Würzburg, and Professeur Agrégé Pozzi, of Paris, all busy men, took the time to come to New York for the meeting, before which they presented valuable papers. It was an honor which American physicians will not readily forget.

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The special event in the commemoration was the banquet, held on Thursday evening, and it was a happy thought to arrange that Dr. McMurtry's address should be given after the dinner, at a time when it naturally led to sympathetic remarks by other distinguished men. The choice of Dr. Lewis S. McMurtry, the eminent Louisville gynæcologist, to speak in commemoration of the pioneer ovariotomist, also a Kentuckian, was peculiarly appropriate. Nobody could utter more telling or more graceful sentences concerning McDowell than those that came from Dr. McMurtry.

Few achievements in surgery—perhaps none at all—have had more beneficent results than have followed Ephraim McDowell's early ovariotomies. Sir Spencer Wells's work in demonstrating the tremendous saving of life by ovariotomy is one of the most convincing testimonies to the great advantage which humanity has drawn from the activities of the medical profession, and a work of which we are all proud. It stands almost on a par with the record of Listerism. It was indeed well that the American Gynæcological Society should have made a special point, at its thirty-fourth annual meeting, of celebrating the centennial of McDowell's triumph.—*New York Med. Journ.*

THERAPEUTIC VALUE OF RADIUM.

In introducing the following article to our readers, we wish to call special attention to the fact that latterly radium has been extensively advocated as a therapeutic measure in epithelioma and various skin affections. Since the foreign journals are exploiting the matter in a manner not yet attempted by our own journals, it would seem the time is opportune to bring before our general practitioners a scientific estimate of the value of radium in modern therapeusis. One of the best expressions on the subject is a paper by J. M. H. MacLeod, M. A., M. D., M. R. C. P., which appeared in *The Practitioner* (London) for May, 1909, under the title, "Observations on the Therapeutic Value of Radium, and Its Application."

"At the present time," says Dr. McLeod, "when the attention of the public is being drawn to radium in a fashion which may lead to disappointment, and when exaggerated reports of its healing powers are to be found in the daily press, it will not be inappropriate to consider briefly some results which have been accomplished in the past by it, and to review the recent observations which have been published on its therapeutic value and on the best methods of applying it.

"Even in the early days of radium, soon after its brilliant discovery by Madame Curie, its therapeutic possibilities were recognized. In 1903, if not earlier, it was known that something emanated from the salts of radium which had an exciting action on living tissues, and that if the radium salt were applied to the tissue in a concentrated form, or for a long period, a destruction resulted somewhat similar to that caused by the x-rays. The three main types of radiation from the radium salt had been distinguished, namely, α, β, and γ rays, but the precise action of these on the tissue was a matter of conjecture.

"Through the experiments of my colleague, Dr. Mackenzie Davidson, and subsequently of others in this country, it was found that radium had a selective action on certain diseased tissues, and that it acted beneficially on rodent ulcers, small epitheliomata, and lupus vulgaris. At that time the methods of application of the radium were crude. The salt, which was employed, was the bromide, either pure or mixed with more or less barium. This was applied to the skin in a thin glass tube sealed at the ends, or in a depression on a vulcanite button covered by a thin sheet of mica or aluminum, in amounts varying from 5 to 10 milligrammes. Other forms of 'applicators' were devised for specific purposes; for example a catheter-like tube holder, made with a malleable metal extension, was improvised by the writer to apply the radium in cases of cancer of the throat, uterus, rectum, etc.

"During the first half of 1904, at the suggestion of my colleague, I tried the effect of radium in a number of cutaneous affections in the

Skin Department at Charing Cross Hospital, and, in a paper published in June, 1904, advanced the following tentative opinion regarding its therapeutic value, which it will be of interest to quote in order to compare them with the recent developments of the subject. The radium used then was in the form of radium bromide, and radium barium bromide, in quantities of 5 mg. in tubes, and of a radio-activity of 1,800,000 and 600,000, taking the radio-activity of the same quantity of uranium as unity.

" 'Its chief utility is in the treatment of rodent ulcer, and in the case of a small rodent ulcers it acts almost like a charm. In rodent ulcers of a diameter larger than a shilling, treatment by the x-rays is more practical, as the whole of the ulcer can be exposed at once and not piecemeal as with the small quantities of radium at present at our disposal. In some cases of rodent ulcer, which have been subjected to a long series of exposures to the x-rays, the rays seem to lose their effect and the heal process becomes stationary; then exposure to radium may be used with advantage, and the healing again stimulated.' "

" 'With regard to cancer, further experience is necessary before any definite statement can be made. It is possible that radium may prove a useful adjunct to surgical treatment. In lupus vulgaris, radium causes the disappearance of the granuloma and a replacement of it by healthy scar tissue, but, except in very small lesions, the treatment is not at present practical. It is a useful adjunct to the Finsen light and the x-rays, as it can be applied to positions which are difficult to get at, such as about the eyelids and the mucous membrane of the nose. In the verrucose type of lupus vulgaris it is superior to the Finsen light.' "

"With regard to the permanence of the results, so far as rodent ulcers are concerned, this has been fairly satisfactory. Several of the cases, treated about 1904, which appeared to be healed, have remained sound. In two of them, however, in which no trace of the disease appeared to be left, a recurrence took place in the scar. In one of these a second series of exposures was given, healing again took place with the formation of an apparently healthy scar, but a relapse has since supervened. In the other, excision was resorted to, and the subsequent history of the case has not been obtained. In this connection, Dr. J. H. Sequeira recently demonstrated, at the Royal Society of Medicine, a case of rodent ulcer of the eyelid cured by radium, in 1904, in which the scar had remained sound since then.

"With regard to lupus vulgaris, the early cases have given disappointing results, and recurrences have been usual. In a case of lupus verrucosus of the hand, in a boy, reported as apparently cured, in 1904, a relapse occurred a year later. Radium was again employed with temporary benefit, but, as a further relapse took place, its use was discontinued, and other methods of treatment were employed.

"About this time, another field of utility for radium was opened up by the discovery that it had a selective action on blood-vessels causing

them to disappear. The writer tried its effect on lupus erythematosus, but the results were disappointing. In connection with vascular nævi, on the other hand, the outlook was more promising. The first case of 'port-wine stain,' treated by radium in this country, was that shown by the late Mr. T. J. P. Hartigan, at the Dermatological Society of Great Britain and Ireland, in January, 1904. By means of radium applications, smart localized reactions had taken place, which, on healing, had left patches of pale scar tissue in the midst of the red skin, but, as the blanching had occurred unevenly, the general disfigurement of the lesion was comparatively little reduced.

"Since those early days, great advances have been made with regard to the knowledge of the emanations and radiations from radium, their power of penetration, and the best method of applying the agent to the skin, and these advances have resulted in the main from the patient researches of our French colleagues at the Radium Institute in Paris. Perhaps the two most important factors in this advance of knowledge were: (1) the discovery, in 1905, by M. Danlos, that the action of radium was intensified if the salt were spread by means of a varnish on a flat surface, and so applied to the skin, instead of being placed in a capsule of glass or aluminum, and that, by this means, a much larger surface could be acted upon in an even manner, and (2) the employment of an electroscope, such as that devised by M. Danne, to estimate the radio-activity of the radium specimen to be applied.

"In this way, the science of radium therapy has become almost as exact as Röntgen therapy has been rendered by the invention of the invaluable 'pastille' by Sabouraud and Noiré. The recent papers and cases, published by Drs. Wickham and Degrais, Dominici and Bory, demonstrate the immense value of the improved method of applying it.

"Mode of Application and Apparatus.—By means of a special varnish, invented by M. Danne, the composition of which has not been made known, the radium salt is fixed on a flat metal plate, or a piece of stiff linen. This varnish is permeable to almost all the rays, and resists the action of heat, water, vaseline, and antiseptics, such as ordinary solutions of permanganate of potash, and perchloride of mercury, but it is unsafe to expose it to absolute alcohol or ether. The metal plates vary in shape, some being circular, while others are square, oblong, or triangular, and in size from 5 mm. up to 6 cm. square. The pieces of linen vary in size up to several centimetres square. The plates are fixed on handles, some being made to move upon them by means of a pivot. In addition to these, small rods or spheres are employed to carry the varnished radium into cavities. The salt of radium, which is employed for varnishing on those flat surfaces, is the sulphate of radium, which, unlike the bromide, is insoluble. Great care is taken in the spreading and fixing of the salt by the varnish, in order to ensure that it is evenly spread, and that each centimetre of surface has 1 centigramme spread on it. The radium sulphate may be employed pure, *i. e.*, with a radio-

activity of 2,000,000, but, more usually, it is diluted by mixing it with barium sulphate, so as to reduce the radio-activity to 500,000 or less. In the choice of the apparatus to be employed in an individual case, not only are the weight of the salt of radium employed, its radio-activity, and the total dimensions of the surface, over which it is spread, taken into consideration, but also the percentage of the α, β, and γ rays emitted by it.

"This mode of application has two advantages over the older method of applying it; first, by it the maximum effect of the radium salts on the tissue can be obtained, certain weakly penetrating rays not being cut off by the screen of glass or mica, and, second, and more important, a much larger radio-active surface is obtained. It has been estimated that, with the radium salt varnished on a flat surface, the effect on the tissue is much greater than if the same amount of salt were applied in a glass tube, and that, with the salt spread out, 1 c.grm. of radium salt of an activity of 100,000 has approximately the same effect as 5 c.grm. of a salt of an activity of 600,000 enclosed in a glass tube.

"The varnished surface is not applied directly to the skin, but often with the interposition of a thin layer of gutta-percha to protect it from moisture or discharges, or various screens, consisting of thin aluminium, lead, ebonite, or a layer of wadding 1 cm. thick covered with gold-beater's skin, etc., are interposed to cut off the less penetrating rays. By the latter method several brilliant results have been obtained. The α-rays are the least penetrating, and are cut off by the thinnest sheet of mica, aluminium, or glass, the same substances cut off the softer β-rays, while hard β-rays pass through them. The γ-rays are the most penetrating, and can pass through lead 4 cm. in thickness. It is these highly penetrating γ-rays which have the most powerful selective action on diseased tissues, while the softer, less penetrating rays have a less discriminating destructive effect, and are more potent in causing superficial inflammatory reaction.

"For example, in a case of epithelioma of the lip, successfully treated by Dominici and Bory, a circular piece of linen 3 cm. in diameter, with 1 c.grm. of radium sulphate, mixed with 3 c.grm. of barium sulphate varnished upon it, and a radio-activity of 500,000, was applied to the lesion. But between it and the skin were interposed a layer of gutta-percha 1-10 mm. thick, a sheet of lead ½ mm. thick, 8 rounds of papers, 2 layers of gutta-percha, and 2 pieces of plaster. In this way, the tumour was subjected to an irradiation exclusively composed of γ-rays of an activity estimated at 4,500, and the secondary radiation, produced by the rays passing through the lead, was intercepted by the paper.

"In order to avoid getting an excessive action on the surface of raised lesions by repeated or prolonged exposures, Wickham and Degrais have introduced the method of application, which they have graphically named the method of 'Feu croisé,' and which consists in placing two or more flat 'applicators' opposite each other on the tumour, so as to sub-

ject the deeper parts of it to the 'crossed fire' of penetrating rays from the different 'applicators.'

"It would seem, at the present time, that the more important advantage of the French method of applying radium over the older methods is that, owing to the radium salt being evenly spread over a relatively large area instead of being collected in small bulk in a tube, a larger radio-active surface is obtained with the same quantity of radium, and the total output of rays available to act on the tissue is greatly increased. The presence of a thin layer of mica or aluminium, cutting off the weakly-penetrating x-rays, may yet prove to be no disadvantage, as is seen in Dominici and Bory's case of epithelioma, where only highly-penetrating rays were employed. In this country, till recently, it has been the bromide of radium which has been used for therapeutic purposes, and, as this salt is soluble, certain difficulties are presented in varnishing it on a flat surface. These difficulties can, however, be overcome, short of having the bromide transformed into the insoluble sulphate, by the simple expedient of having the bromide crushed down and evenly spread and pressed between a flat metal surface and a thin mica or aluminium window. In this way 'applicators' of different shapes and extent of surface can be constructed in which definite quantities of radium bromide, either pure or diluted in different proportions with varium bromide, are spread over a given surface. I have had such an applicator made and it is giving satisfactory results.

"*Time of Application.*—The time of application of a specimen of radium depends on various factors, such as the radio-activity and amount of the salt applied, the extent of surface on which it is spread, the percentage of the different rays, the presence of some such screen, as lead or aluminium, between it and the tissue, and the diseased condition for which it is applied. In the early cases, the time was estimated in an approximate manner by applying the specimen of radium to one's own forearm, or to that of the patient, and observing how long it took to produce a mild reaction, and, in estimating the time of exposure in an individual case, Wickham and Degrais still advocate the simple expedient of employing a preliminary tentative exposure of the tissue. Experience has taught certain lessons, however, which are a guide in this matter. It has been found that 5 m.grm. of pure radium sulphate, varnished on a flat surface of 1 c.m. square, when applied directly to the skin for 20 minutes, can produce a severe reaction with ulceration, the same result being obtained by three applications of 10 minutes' duration on consecutive days, and also that 2 c.grm. of sulphate of barium radium of a radio-activity of 500,000 requires an application of 40 minutes at one sitting to cause ulceration.

"In the treatment of vascular nævi, a curative effect can be obtained without the production of marked reaction, which, on account of the scar it leaves, is to be carefully avoided, a slight reaction, however, being no disadvantage. Using a flat round plate 6 cm. in diameter, over which

is varnished 2 c.grm. of sulphate of barium radium of an activity of 500,000 with 10 per cent. α, 87 per cent. β, and 3 per cent. γ rays, Wickham and Degrais, in the case of pale 'port-wine stain,' found that the direct application to the skin should be one hour in two seances, while, in the case of deep violet nævi, that it should be two hours in two seances. In the case of raised angiomata, and still more in that of rodent ulcer and epithelioma, the time of application might be safely increased.

"On the other hand, when the α and soft β rays are screened off by aluminium or lead, much longer applications may be given; in Dominici and Bory's case of epithelioma, for example, in which all but the γ rays were excluded, and the external radio-activity was only 4,800, an exposure of six consecutive days was given, the radium specimen being applied continuously during that time except at meal times.

"It is impossible to lay down hard-and-fast rules with regard to the time of exposure, and these figures are simply quoted as a guide. The length of exposure, as well as the precise method of application in a case, are subjects of such infinite importance, both with regard to the permanence of the result and the cosmetic appearance of the scar, and vary so much in different cases that they must be left largely, as in the case of the x-rays, to the experience and judgment of the operator.

"*Action of the Radiations from Radium on Diseased Tissues.*—The rays from radium have a selective action on certain diseased tissue elements, affecting them much more powerfully than they do healthy tissue, and eventually causing their destruction. The types of cells, on which they have the most marked action, are the comparatively weakly resistant cells of rodent ulcer, and various other pathological conditions of the epidermis, such as epithelioma of the skin and warty growths. Their destructive action has also been proved to be great in the case of the cells of epithelioma of the lip and mouth. On the cells of cancer, growing from the epithelium of the œsophagus, uterus, bladder, etc., the destructive action on the diseased tissue has not been so marked, but this may be regarded, quite reasonably, as due to the difficulty of reaching such growths, of watching and controlling the applications, and to the great rapidity of the malignant proliferation in these situations, as compared with that which occurs in rodent ulcer.

"In the case of granulomatous cells, such as those of tuberculosis cutis, the destructive action of the rays, though definite, is considerably less than on pathological elements of epidermal origin, and in this they closely correspond with that of the x-rays. This is probably dependent on the fact that the effect of the rays is greatly diminished by having to pass through the epidermis, and suggests the application of long exposures to highly penetrating rays. The rays have also a definite and selective action on blood-capillaries, destroying them, and hence their value in the treatment of angiomata. This action, according to the researches of Dominici and Barcat, is brought about in the following manner: The white fibrous and elastic tissues of the corium and blood-

vessel walls disintegrate, and, at the same time, the fixed cells undergo a reversion to an embryonic state. In this way, the angiomatous tissue is replaced by numerous embryonic cells with a few contracted capillaries and blood spaces among them. By the proliferation and evolution of these embryonic cells, a new and healthy connective tissue gradually becomes built up.

"All three types of rays act on the skin, the harder and more penetrating the rays the more selective the effect. The soft weakly penetrating rays, such as the α and soft β rays, tend to cause superficial destruction, and hence the advisability of cutting them off in all cases in which it is important to avoid ulceration and subsequent scarring.

"Another definite effect of the radium rays is that on the sensory nerve terminations, for, like the x-rays, they not only allay itching, but also relieve pain. The bactericidal action of the radium rays is slight and is probably dependent on the α rays.

"At the time of application of the radium, no definite sensations or signs of inflammation are produced, and it is, as a rule, only after the lapse of 10 to 14 days that the characteristic reaction sets in. This is associated with all the signs of inflammation, which may be limited to the lesion itself, or, if a powerful reaction occurs, it may spread to the neighbouring skin. In a marked reaction, oozing takes place, and a scale or more or less firm scab, forms, in some cases not unlike a rupial crust, which separates naturally in two to four weeks, when another scab may form, or the lesion may have dried up and appear to be completely healed. When the application has been excessive, signs of reaction may appear much earlier, and erythema may be noticed in 24 hours. Vesicles then appear which dry up to form a scab, which falls off in a week or ten days, leaving a superficial ulceration. This heals slowly, leaving a scar which is red, smooth, and presents telangiectases like the scar of an x-ray burn. The radium reaction is probably the result of an inflammatory process caused by the toxic effect of the dead tissue elements, which have been killed by the rays, acting on a tissue partially devitalised by the same rays.

"In addition to the rays, which are given off by the radium, emanations in the nature of a gas are also emitted, which confer radio-activity on substances with which they come in contact. These emanations may play an important part in the future developments of radium therapy.

"Diseased Conditions Which Have Been Cured or Benefited by Radium.—So far the field of utility of radium in the curing of disease as been a limited one, and it is in the case of certain skin affections, such as rodent ulcer, epithelioma, keloid, and various forms of vascular nævi, that the most striking results have been obtained.

"Rodent Ulcer.—In the experience of almost everyone, who has employed radium for the treatment of rodent ulcer, there is no remedy which gives such brilliant results as it does. Having applied it at Charing Cross Hospital and in private practice, since 1904, in a considerable

number of cases with the comparatively small quantity of radium at my disposal, I can fully endorse this view. Relapses have certainly occurred in several cases, but they have been either in cases of such an advanced type, involving large areas and extending down to bone, that the quantity of radium was inadequate to thoroughly deal with them, or in which the exposures were insufficient, and the patient, failing to report himself when recurrence showed itself, allowed the disease to assume serious developments before being seen again.

"There appears to be in the radiations from radium something which is more selective in its action on rodent ulcer than the rays from an x-ray tube, for cases, in which healing has gone on up to a certain point with the x-rays and come to a standstill, have begun to heal again when radium was applied.

"*Epithelioma.*—Epitheliomata of the skin are also capable of being cured by radium, though not so easily as rodent ulcers, since the cells composing them appear to be more resistant to the radiations than those of rodent ulcer.

"Several cases have been lately reported, in which epitheliomata of mucous membranes, such as the lip and tongue, have also resolved under this treatment. This is an observation of great importance, as it is a general experience that the x-rays have a feeble action on this type of growth. In the case already referred to, which was recently published by Dominici and Bory, an epithelioma of the lower lip, the size of a 5-franc piece, in a man, aged 67 years, was cured by means of radium. The treatment was begun on the 9th of January, 1908, and, by the 25th of February, it had gradually receded till nothing was left but a supple cicatrix which was slightly indurated towards its outer angle.

"*Vascular Nævi.*—All forms of vascular nævi have been treated, more or less successfully, by radium, and the statistics published by Wickham and Degrais, based on 101 cases, show that, by this treatment, results can be obtained which are superior to those obtained by any other means at present at our disposal.

"By weak doses of radium, frequently repeated, raised angiomata completely dry up and become decolourised, leaving a pale, supple scar, and this can be accomplished without the production of any marked reaction. This method has a great advantage over excision, electrolysis, and the actual cautery, since it is painless, and can be done while an infant is asleep.

"It is in 'port-wine stain,' however, that the most striking results have been obtained, for, up to now, these lesions have been the despair of surgeons, and any treatment adopted, if successful in destroying the nævoid tissue, usually resulted in the production of scarring, which was as disfiguring as, if not more so than, the disease. By means of repeated doses of radium, just sufficient to produce a slight reaction, and no more, the red or purple tint of the nævus has been greatly diminished and the colour gradually reduced, so as to approach that of the surround-

ing skin, without the production of a scar. These results have been obtained by Wickham and Degrais, not only in superficial nævi, but in those in which the whole thickness of the cheek was involved. Of course a treatment such as this, to be successful, requires great care and experience, and, if the nævus is extensive, occupies a considerable time, as the whole diseased surface may have to be gone over repeatedly piecemeal.

"*Pigmented and Hairy Moles* have also proved to be amenable to some extent to this form of treatment, with the destruction of the hairs and the diminution of the pigment.

"*Seborrhoic Warts and Papillomata* resolve under it, as they do in most cases under the x-rays.

"In the case of deep-seated *cancer*, my experience at Charing Cross Hospital has so far been disappointing, and all that has been accomplished has been to relieve pain to some extent, and to retard, but not arrest, the progress of the disease. It is unfair, however, to base any conclusion on these results, as the amount of radium employed was insufficient to effectively deal with the diseased tissue. Recently, several cases have been reported from Paris, in which striking improvement was obtained, but it is too soon to judge of these results, and it is well, while continuing experiments, to keep an open mind on this all-important subject. Still, the outlook, where the lesion is so situated that the radium can be applied satisfactorily, and a sufficient quantity of radium is available, is distinctly encouraging.

"*Tuberculosis Cutis*.—With regard to the treatment of the various forms of lupus vulgaris, our experience with radium has been disappointing. It was found possible to cause the apparent disappearance of nodules of lupus by the radium, but in nearly every case recurrence supervened. In the case of lupus, affecting the mucous membranes of the nose and mouth, temporary improvement occurred after applying radium, but relapse quickly took place. This was specially disappointing, as those situations, being difficult to reach by other methods of radio-therapy, seemed admirably suited for radium treatment. The best results were obtained in the case of lupus verrucosus, but even in this, although it caused the warty superstructures to disappear, and apparently cured the underlying granuloma, the improvement was only temporary. The action of radium in lupus somewhat corresponds with that of the x-rays, and so far is not comparable, in its efficacy, with that of the Finsen light."

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ADDRESS ALL COMMUNICATIONS TO METROPOLITAN BUILDING, ST. LOUIS, MO.

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EDITORIAL

THE FIFTY-SECOND ANNUAL MEETING.

The fifty-second annual meeting of the State Association closed its three days session in Jefferson City on May 20, after a very successful and harmonious gathering, with a registered attendance of 350 members. The House of Delegates disposed of the business affairs of the Association in excellent time, and everything of importance was attended to on the first day of the meeting. The report of the defense committee was read at this session and its recommendation that legal defense be made a permanent privilege of membership, was adopted by accepting the amendment to the by-laws introduced at the last annual meeting. The report reflected great credit upon the members of the committee for the manner in which they conducted the suits brought against some eight members who applied for assistance from the Association. One of the cases was dismissed and the others were continued, with a likelihood that most, if not all of them, will be dropped before going to trial. The committee reported that it had discharged its duties without expending any of the money ($500) appropriated at the last meeting to defray the expense of conducting the defense of members sued, and returned the entire sum to the general fund of the Association. This highly gratifying execution of its duties was made possible for the committee by the friendly coöperation of Mr. Morton Jourdan, of St. Louis, the Association's legal adviser, who offered his services

gratuitously, and thus has placed the Association under renewed obligations. For the ensuing year the sum of $1,000 was appropriated for the use of the defense committee and the old committee was reappointed to serve for another year.

The committee on public policy and legislation reported that five bills had passed the legislature and will become laws. Of these the most important is the bill for the collection of vital and mortuary statistics. When the provisions of this bill have been put into operation and satisfactorily carried out, Missouri will be included in the list of registered states whose reports of vital statistics are accepted by the United States Census Department as adequate and reliable for purposes of statistical compilation. Thus far only sixteen states have been accorded this recognition by the Census Department.

The bill which requires appeals from the action of the State Board of Health in revoking licenses, provides that these appeals shall be taken on a writ of certorari and that the license of the defendant shall stand revoked until the court has annulled or otherwise quashed the action of the Board of Health. The new State Board of Health, therefore, will have greatly increased power in the suppression of illegal practices by quacks and charlatans.

Besides these actual successes in securing new laws and in amending old ones, we should feel extremely proud of the intelligent and politic work of the committee in preventing the passage of all adverse medical legislation. Numerous bills were drafted and pushed, some of which if passed would have pulled down our standard of practice from the high plane to which it has been raised by the unceasing, unselfish and constant efforts of those who believe in the doctrine of higher medical education.

The reports of the committee on medical education and of the committee on tuberculosis were highly interesting and instructive, and showed that rapid progress is being made in the advancement of the standard of medical education and in the control and prevention of the spread of tuberculosis. All these reports will be published in full in our July issue, and we commend them to the careful attention of every member.

The scientific sections were well attended and a large proportion of the papers announced in the official program were read and discussed.

The officers for 1909-1910 are as follows: President, Dr. Tinsley Brown, Hamilton; vice-presidents, Dr. J. M. Bell, St. Joseph; Dr. J. A. Harris, Mt. Vernon; Dr. H. G. Shobe, Paris; Dr. B. W. Hays, Jackson; Dr. J. L. Thorpe, Jefferson City; secretary, Dr. A. W. McAlester, Jr., Kansas City; treasurer, Dr. J. Franklin Welch, Salisbury. Medical Section: Chairman, Dr. Franklin E. Murphy, Kansas City; secretary,

Dr. W. R. Patterson, Tipton. Surgical Section: Chairman, Dr. Willard Bartlett, St. Louis; secretary, Dr. Leo Rassieur, St. Louis. Eye, Ear, Nose and Throat Section: Chairman, Dr. John Green, Jr., St. Louis; secretary, Dr. Clarence Loeb, St. Louis.

DR. McCORMACK'S TOUR.

Dr. McCormack's tour through the State was attended with marked enthusiasm in every town which he visited. His lecture was a revelation to many people, doctors as well as others, and the impression left upon his hearers will undoubtedly aid greatly in strengthening the spirit of friendly coöperation of the public with the medical profession in accomplishing the many reforms for the improvement of hygienic and sanitary conditions of the people in both public and private life.

The peculiar ethics which form the principles of medical practice—a code differing so essentially from the principles of conduct governing every other profession and calling that it is difficult for the non-medical person to understand its application—commands the physician to devote himself to the relief of the physical and mental sufferings of his fellowmen, without regard to his own welfare. The prevention of disease is a perfectly natural step for the profession to take, from the physician's standpoint, following the discoveries of the causes of disease, notwithstanding the fact that the dissemination of such knowledge can only result in a curtailment of the source of the physician's income. In his lectures Dr. McCormack makes this matter plain to the people, and there is therefore a growing sentiment of deeper and greater faith on the part of the people in the doctrines of higher medical education and better sanitary and hygienic laws; and a closer affiliation between the profession and the people.

The success of Dr. McCormack's tour has been very pronounced; in all places he was greeted by large audiences and the people seemed pleased to learn that they could do something towards preventing many of the diseases that now afflict them. The county societies and the district councilors succeeded most admirably in arousing the interest of the people in the lectures, and are to be commended for the activity shown in connection with this campaign of education. Without their hearty coöperation and a great deal of preparatory work in announcing the visits of Dr. McCormack, and the character of the address which he would deliver, there would not have been the intense interest and general enthusiasm which were so evident in all the audiences that heard the lectures.

EDITORIAL NOTES

SCHOOL HYGIENE.—Dr. John J. Cronin is conducting a lecture and laboratory course in School Hygiene and Sanitation at the New York Post-Graduate Medical School.

AT THE RECENT MEETING of the State Anatomical Board in Jefferson City, provision was made authorizing the Secretary of the State Anatomical Board to furnish dissecting material so far as possible to those county societies who may desire this material in connection with their post-graduate class work. For details in regard to this matter, inquiries should be addressed to Dr. C. M. Jackson, Secretary, State Anatomical Board, Columbia, Mo.

The officers of the Board for the coming year, elected at the recent meeting, are as follows: President, Howard Hill, Kansas City; vice-president, D. M. Shoemaker, St. Louis; secretary, C. M. Jackson, Columbia; treasurer, R. J. Terry, St. Louis.

SINCE FEBRUARY 25, the Council has acted on the following products:

Articles accepted for N. N. R.:

Enzymol (Fairchild Bros. & Foster).
Sabromin (Farbenfabriken of Elberfeld Co.).
Medinal Tablets, 5 grains (Schering & Glatz).
Pituitary Substance (Anterior Lobe) (Desiccated) Armour & Co.
Pituitary Substance (Posterior Lobe) (Desiccated) Armour & Co.
Parathytoid Gland (Desiccated) (Armour & Co.).
Arsacetin (Victor Koechl & Co.).
Urethan "Hoechst" (Victor Koechl & Co.).
Soamin (Burroughs, Wellcome & Co.).
Tabloid Soamin (Burroughs, Wellcome & Co.).
Bile Salts (Fairchild Bros. & Foster).
Iodone Surgical Dressing and Dusting Powder (Henry C. Blair Co.).

Articles accepted for N. N. R. Appendix:

Compressed Tablets Anesthesin 2½ grains (Sharp & Dohme).
Solution Atoxyl 10% (Sharp & Dohme).
Solution Atoxyl 10% with Novocaine 1% (Sharp & Dohme).

Compressed Tablets Atoxyl and Quinine Comp. (Sharp & Dohme).
Compressed Tablets Benzosol 2½ grains (Sharp & Dohme).
Compressed Tablets Benzosol and Codein (Sharp & Dohme).
Compressed Tablets Blaud with Atoxyl (Sharp & Dohme).
Compressed Lozenges Orthoform, 1 gr. (Sharp & Dohme).
Compressed Tablets Pyramidon 1½ gr. (Sharp & Dohme).
Elixir Duozyma (Louisville Pharm. W'k's).

Articles reconsidered and rejected:
Salit (Heyden Chemical Works).

Transfer of Agency:
Stovaine (formerly sold by Walter F. Sykes, New York, now sold by the Parmele Pharmacal Co.).

Sixteenth International Medical Congress to be held in Buda-Pesth, Hungary, August 29 to September 4, 1909. Preliminary program of the tours arranged for American delegates. As a large number of American physicians will attend the Sixteenth International Medical Congress to be held in Buda-Pesth, the following itineraries have been arranged to enable the journey to be made with the maximum of comfort and enjoyment, at fixed inclusive fares:

Tour A provides for a direct trip, with short visits to Paris and Vienna, in addition to the stay in Buda-Pesth during the session of the Congress, with return to New York via Berlin and Hamburg.

Tour B presents an opportunity of combining a visit to Great Britain, Paris and some of the points of scenic interest in Switzerland with the opportunity of returning direct from Buda-Pesth to New York.

Additional security, and consequently added pleasure, will be obtained by thus traveling as a congenial party of physicians and their families, with a conductor thoroughly conversant with the route, languages and customs of the countries to take charge of the details of travel.

A number of desirable rooms have been especially reserved at the Hotel Hungaria, Buda-Pesth, for the American party, but as the accommodations are limited, prompt reservation is urged on the part of those who contemplate attending the Congress, in order to secure the best rooms. Board at this excellent hotel is included in the price of the round trip ticket, covering the entire session of the Congress.

Physicians desiring to visit the hospitals and clinics in Berlin, Vienna, Paris and London, will be afforded an opportunity to do so, and special programs will be provided for this service.

Members of either section of this party desiring to remain longer on the Continent, or to return home by different routes, will be per-

mitted to do so, provided this fact is made known before sailing from New York.

The business arrangements of the tour have been placed, as before, in the hands of Thos. Cook & Son, the well-known Tourist Agents, which insures perfect and complete service for the trip, and relieves passengers from all troublesome details incident to foreign travel. Those delegates who attended the last meetings in Madrid and Lisbon will remember the excellent service afforded them. For further information apply to Chas. Wood Fassett, M. D., Krug Park Place, St. Joseph, Missouri.

COUNTY SOCIETY NOTES

ATCHISON COUNTY MEDICAL SOCIETY.

The Atchison County Medical Society met in special session at Tarkio, April 22. Those present were: Dr. J. W. Holliday, President; Dr. A. McMichael, Secretary; Dr. J. A. Hunter, Treasurer; Dr. J. A. Postlewaite, Dr. C. M. Waugh, Dr. W. G. Safford, Dr. G. E. McBride, Dr. E. P. Taylor. Dr. Nickle of Iowa also met with the Society.

After disposing of the regular routine of business, Dr. J. W. Holliday read a lengthy paper on the subject of "Empyema," which subject was handled by him in a very able manner.

Dr. W. G. Safford was elected delegate to the meeting of the State Medical Association.

After short talks by various members, the Society adjourned to meet in Rockport on the first Thursday in July.—A. McMichael, M. D., Secretary.

BENTON COUNTY MEDICAL SOCIETY.

The Benton County Medical Society met in Warsaw, April 27, with the president, Dr. H. G. Savage, in the chair. Members present were: Drs. H. G. Savage, Marion Dillon, S. O. Stratton, E. F. Haynes, G. A. Greeson, R. L. Pomroy and J. R. Smith.

Drs. E. F. Haynes and R. S. Battersby were elected to membership.

Dr. H. G. Savage read a paper entitled "The Relation of Adenoid Vegetations and Enlarged Tonsils to the Growth and Development of Children Mentally and Physically," which was very interesting and was thoroughly discussed by all the members present.

Dr. S. O. Stratton presented a clinic which was also very interesting. This was followed by a discussion on how to check hemorrhage from the nose, and the advantages and disadvantages of certain preparations used.

The Society adjourned to meet in Lincoln some time in June, at the call of the president, at which time a paper will be read and discussed and a general clinic will be held.—Marion Dillon, M. D., Secretary.

CALDWELL COUNTY MEDICAL SOCIETY.

The second quarterly meeting of the Caldwell County Medical Society met in Hamilton, April 21st, Dr. R. L. Mount, president, in the chair. The attendance was good. Dr. C. M. McConkey, of Lathrop, Drs. Reynolds, Cross and Lichtenburg, of Kansas City, were present and were accorded the privilege of the Society.

Dr. R. O. Cross read a paper on "Tuberculosis," which dealt with the cause and prevention of the disease. The paper was discussed by most all present.

Dr. W. T. Reynolds read a paper on "Tuberculosis of the Kidney," with report of cases. The paper was extensively discussed.

Dr. J. S. Lichtenburg gave a talk from his clinical notes on various diseases of the eye.

Dr. Tinsley Brown read a paper on "Abortion," with a report of a number of cases, which illustrated the many complications met with in practice.

The next meeting will be held in Kingston in July, and the following were appointed as essayists: Drs. Leeper, Goins, Gartside, Scanlon, Smith and Lindley.—TINSLEY BROWN, M. D., Secretary.

CHARITON COUNTY MEDICAL SOCIETY.

The Chariton County Medical Society held its regular monthly meeting at Salisbury, May 13th, with ten members present. We were glad to have with us Dr. Lewis, of Sumner, who has never before attended a meeting. The application of Dr. J. W. Conard, of Sumner, was read and on recommendation of Dr. A. W. McAlester, Jr., of Kansas City, the doctor was duly elected to membership.

The committee appointed to draft a schedule of professional fees was, on motion of Dr. McAdam, continued until our next regular meeting.

A very interesting clinic was presented by Dr. McAdam, a child two and a half years of age with infantile spinal paralysis; both lower limbs were paralyzed. The case was diagnosed as anterior poliomyelitis, probably from malarial infection, and elicited an interesting discussion.

The Society then adjourned to meet in Brunswick, June 10.—C. A. JENNINGS, M. D., Reporter.

HENRY COUNTY MEDICAL SOCIETY.

The Henry County Medical Society held a meeting on Friday, May 21st, the president, Dr. W. H. Gibbins, presiding. Those present were: Drs. Gibbins, Britts, Jones, Beaty, Smith, McNees, Peelor, Galbreath, Jennings, Nichols, Netherton, Derwent and Douglass.

Dr. McCormack, of Kentucky, addressed the members with reference to the duties imposed upon them when becoming members of a county medical society. He pointed out the fact that by helping to maintain a society, by regular attendance and by participating in its meetings, they could make this work quite as important as a post-graduate course. Dr. McCormack said the papers read and discussed, the quizes following the reading and discussion, the presentation of patients and specimens, analyses of the excreta, could all be done in the county society and be as valuable for each member as similar work in a course at some school. He related instances where the members of county societies had inaugurated such methods with very great benefit to all. The suggestion was received with much enthusiasm and the

following committee appointed to draft a course and report at the next meeting, Wednesday, June 16th: Drs. Peelor, McNees and Douglass.—F .M. Douglass, M. D., Reporter.

ST. JOSEPH-BUCHANAN COUNTY MEDICAL SOCIETY.

The St. Joseph-Buchanan County Medical Society held its regular meeting on Wednesday evening, May 12, 1909, the president, Dr. J. M. Doyle, in the chair.

Drs. B. B. Simmons and W. S. Fast were elected to membership in the Society.

The application of Dr. F. G. Thompson for membership was read and referred to the Censors.

The paper of the evening was read by Dr. C. H. Wallace; title, "Unilateral Hematogenous Infection of the Kidney, With Report of Operative Cases." The discussion which followed was participated in by Drs. P. I. Leonard, Jacob Geiger, L. S. Long, L. A. Todd, R. Willman, O. G. Gleaves.

The Secretary called attention to the State Society meeting at Jefferson City, and the advisability of extending a cordial invitation to meet in St. Joseph in 1910. Dr. Wallace offered a motion to the effect that the delegates be instructed to invite the State Society to hold its next meeting in St. Joseph. Seconded by Dr. Kenney and carried.

The Secretary moved that a committee be appointed to report the proceedings of the State Society at our next meeting. Seconded and carried. The chair appointed Dr. W. B. Deffenbaugh on Surgery; Dr. O. G. Gleaves on Medicine; Dr. P. I. Leonard, Eye and Ear, and Drs. Ballard and McCoy on "Good of the Order."

Upon motion, the Society adjourned to the banquet hall, where refreshments were served, and a pleasant evening was spent in social intercourse.—Chas. Wood Fassett, M. D., Secretary.

BOOK REVIEW

Practical Medical Series: Surgery. By John B. Murphy, M. D., of Chicago. Year Book Publishers, Chicago. Two volumes. Price $2.00 per volume.

We find embodied in these two volumes articles covering the advancement of general and special surgery, most of it having been taken from the best of our journals. To the practitioner or student who wants to check up the year's advancement in any special line, the Practical Medical Series will be found invaluable.

ARTICLES APPROVED BY THE COUNCIL ON PHARMACY AND CHEMISTRY.

Actions and Uses.—Phenocoll hydrochloride is similar to acetphenetidin (phenacetin) in its effects and acts as an antineuralgic and antipyretic. It is claimed by some observers to be less depressing than other coal tar antipyretics and is said to be prompt in its antipyretic action. It has been asserted to have an antiperiodic action and to be efficient as a substitute for quinine in malaria and free from unpleasant by-effects. In somewhat larger doses than are usually employed it is said to have a beneficial action in rheumatic fever. Dosage.—0.3 to 1.3 Gm. (5 to 20 grains) in powder, dissolved in water before taking; hypodermically, in 0.25 to 0.5 Gm. (4 to 8 grains) doses. Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin (Schering & Glatz, New York).

POLLANTIN (FALL).

An antitoxic serum from horses treated with pollen toxin derived from ragweed.

Actions and Uses.—It has no pharmacologic action except the neutralization of the pollen toxin. The serum is not intended for use hypodermically. It is employed for the relief of hay fever; it may be used as prophylactic. Dosage.—One drop should be instilled by means of a pipette into the outer angle of each eye and one or two drops into one nostril, the other being kept closed, every morning before rising. If the first application causes sneezing or reddening of the mucous membrane of the eye, it is recommended to repeat the application, even for the fourth time, if necessary. Manufactured by Schimmel & Co., Miltitz, near Leipsic. (Fritzsche Bros., New York.)

POLLANTIN POWDER (FALL).

A powder obtained by evaporating, *in vacuo*, pollantin serum derived from ragweed toxin at about 45° C. (113° F.) and mixing with sterilized sugar of milk.

Actions and Uses.—The same as those of the liquid. Dosage.—The powder is applied to the eyes by dusting on the conjunctiva and to the nose by snuffing into one nostril, the other being closed, a piece as large as a lentil. Manufactured by Schimmel & Co., Miltitz, near Leipsic (Fritzsche Bros., New York).

PURGATIN.

Purgatin, $C_{14}H_5(OH)\ CH_3COO_2)O_2{=}C_{18}H_{12}O_7$, is the diacetyl ester of trihydroxyanthraquinone (anthrapurpurin).

Actions and Uses.—It is a laxative, said to be free from by-effects. Being insoluble in dilute acids, it passes unchanged into the intestinal tract, where it is slowly split up and produces painless peristalsis. The urine behaves as it does after the ingestion of rhubarb. It has a reddish color and reduces Nylander's reagent. Purgatin is recommended as a mild laxative. Dosage.—0.5 to 2 Gm. (7 to 30 grains), according to individual idiosyncrasy, in powder, capsules or tablets, taken at night. Manufactured by Knoll & Co., Ludwigshafen a. R. and New York.

PHENOCOLL HYDROCHLORIDE.

Phenocoll hydrochloride, $C_6H_4.OC_2H_5NH(CH_2NH_2.CO)HCl{=}C_{10}H_{14}O_2N_2.HCl$, is the hydrochloride of a synthetic base produced by the combination of phenetidin (paraamidophenetol) and glycocoll (amidoacetic acid). Phenocoll, $C_6H_4.OC_2H_5.NH(CH_2CH_2.CO)$, differs from acetphenitidin (phenacetin), $C_6H_4.OC_2H_5.NH(CH_3.CO)$, only in that one hydrogen atom in the acetyl group has been replaced by the NH_2 group.

SAL ETHYL.

Ethyl salicylate, $C_2H_5(C_6H_4.OH.COO)=C_9H_{10}O_3$, is the salicylic acid ester of ethyl alcohol and is analogous to methyl salicylate (oil of wintergreen).

Actions and Uses.—Sal ethyl has the same action as the salicylates, but is said to be less toxic. Dosage.—3 to 6 c.c. (5 to 10 minims) 3 or 4 times a day in the form of gelatin globules. Manufactured by Parke, Davis & Co., Detroit, Mich.

SALIFORMIN.

Saliformin $(CH_2)_6N_4.C_6H_4.OH.COOH$, is the salicylate of hexamethylenamine.

Actions and Uses.—Saliformin is a genito-urinary antiseptic and is recommended as a uric-acid solvent. Its action does not differ materially from that of a mixture of hexamethylenamine and salicylic acid, for it is largely hydrolysed into its constituents in the presence of water. It has been recommended in cystitis, lithiasis and bacterial affections of the urinary passages; also in gout, etc. Dosage.—0.3 to 2 Gm. (5 to 30 grains) in tablets or elixir. Manufactured by E. Merck, Darmstadt (Merck & Co., New York).

SALIT.

Salit consists chiefly of the salicylic acid ester of borneol, $C_6H_4.OH.CO(C_{10}H_{17}O)=C_{17}H_{22}O_3$.

Actions and Uses.—Salit is absorbed by the skin after inunction and is decomposed in the body, liberating salicylic acid in the tissues. It appears to be liable to produce some local irritation and eczema of a mild type. It is antiseptic. It is recommended in gout, articular and muscular rheumatism, neuralgia, erysipelas, pleurisy, etc. Dosage.—It is used only externally, undiluted, by penciling, or preferably by inunction with 5 to 10 Gms. (75 to 150 minims) of a mixture of equal parts of salit and olive oil. Manufactured by The Heyden Chemical Works, New York.

SALOPHEN.

Salophen $(C_6H_4.OH.COO).C_6H_4NH.(CH_3CO)$, is the salicylic ester of 1,4-acetaminophenol, $C_6H_4(NHCH_3CO)$ (OH).

Actions and Uses.—The actions of salophen resemble those of phenyl salicylate (salol). It is not changed in the stomach, but is broken up in the intestine, liberating salicylic acid and acetylparamidophenol, which is not toxic, like phenol. It acts as an antirheumatic, antipyretic, antiseptic and analgesic. It has been recommended in rheumatism, gout, typhoid fever, and as an intestinal antiseptic, in diarrhea and dysentery. Externally it has been applied in psoriasis and other itching skin diseases. Dosage.—0.3 to 1 Gm. (5 to 15 grains), in powder, wafers or capsules. Externally in 10 per cent. ointment. Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York).

SALOQUININE.

Saloquinine, $C_6H_4.OH,COO(C_{20}H_{23}N_2O)=C_{27}H_{28}O_4N_2$, is the salicylic ester of quinine, containing 73.1 per cent. of quinine.

Actions and Uses.—It is a tasteless substitute for quinine and salicylic acid. Dosage.—0.5 to 2 Gm. (8 to 30 grains). Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Merck & Co., New York).

SALOQUININE SALICYLATE.

Saloquinine salicylate, $C_6H_4.OH.COO(C_{20}H_{23}N_2O)+C_6H_4OH.COOH=C_{34}H_{34}N_2O_3$, is the salicylate of the salicylic ester of quinine.

Actions and Uses.—It is recommended in acute rheumatism, neuralgia, tabes, gonorrheal inflammations, etc. Dosage.—1 Gm. (15 grains). Manufactured by E. Merck, Darmstadt (Merck & Co., New York).

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